

American Artisan

and

Hardware Record

Sheet Metal—Roofing—Warm Air Furnaces—Stoves

Vol. 92, No. 9

CHICAGO, AUGUST 28, 1926

\$2.00 Per Year

HORSE HEAD ZINC "Is the Answer."



St. John's Reformed Church School, Chambersburg, Pa. Horse Head Zinc sheet metal work installed by Charles E. Aughinbaugh.

New Jersey
zinc

Roof sumps, conductor heads and conductors of Horse Head Zinc — an easily and profitably made permanent installation.

The easy working qualities of Horse Head Zinc allow you to do your best work in the shortest time. Because of the lower cost of Horse Head Zinc you can offer the buyer a permanent installation at a business-winning price—and protect your profit.

Mr. Aughinbaugh writes that "Horse Head Zinc is the answer." Have you tried it? Just clip the coupon for a sample.

All standard shapes and sizes of Horse Head Zinc conductors, gutters and fittings are made and distributed by the following fabricators:

DAVID LUPTON'S SONS CO.	Philadelphia, Pa.
THE J. M. & L. A. OSBORN CO.,	Buffalo, New York
Cleveland, Ohio	Dubuque, Ia.
KLAUER MANUFACTURING CO.	
HOLBROOK, MERRILL & STETSON,	San Francisco, Oakland and Los Angeles, Cal.
SHEET METAL MANUFACTURING CO., INC.	Brooklyn, N. Y.

The New Jersey Zinc Company
160 Front Street, New York City

ESTABLISHED 1888
CHAS. E. AUGHINBAUGH
MANUFACTURER OF SHEET METAL PRODUCTS
HEATING, VENTILATING AND SHEET METAL CONTRACTOR
SHOP WORK AND JOBBING A SPECIALTY
308-10-12 NORTH MAIN STREET
CHAMBERSBURG, PA. January 14, 1925.

The New Jersey Zinc Co.,
160 Front Street,
New York, N.Y.
Gentlemen:

"Horse Head" Zinc has earned me the good-will of my customers, and that means increasing business. I have always believed in using the best workmanship, but workmanship does not mean anything if the material won't stand up. Everyone wants the best at moderate cost and I have found that "Horse Head" Zinc is the answer.

Very truly yours

Chas. E. Aughinbaugh

THE LARGEST AND BEST EQUIPPED SHEET METAL PLANT IN SOUTHERN PENNSYLVANIA

THE NEW JERSEY ZINC COMPANY,
160 Front Street, New York City
Please send me a sample of Horse Head Zinc so that I can test its easy working qualities:

NAME _____
ADDRESS _____

8-A

IT is easy to establish leadership on paper—a clever writer, a bottle of ink, a flourish of the pen—and there you are.

But leadership, such as that enjoyed by Lamneck's Simplified Pipe and Fittings from coast to coast, cannot be so easily gained.

That requires "stuff". It means delivery of the goods—of true quality consistently maintained over a period of years. It means the manufacture of products that stand comparison. That is the real proof of the pudding.

Accept our offer below and compare to your own satisfaction—and ours.

THE W. E. LAMNECK COMPANY

432-436 Dublin Ave., Columbus, Ohio

Western Representatives:

THE QUICK FURNACE & SUPPLY CO., De Moines, Iowa

LAMNECK SIMPLIFIED PIPE AND FITTINGS

Lamneck Double Wall Non-Vented Pipe

Here is the most rigid pipe on the market with an unexcelled locking feature. Eight percent more efficient than vented pipe.



Write Today

If you are not familiar with the Lamneck line; if you do not have our catalog or discount sheet—write us today. Samples, too, of any of our own manufactured products furnished free for the asking.

Cast Iron Furnace Fellows Coming Over to Gas Tight Steel

ONE more of the leading manufacturers of cast iron furnaces is out with a steel furnace of gas tight steel construction and others are to follow.

THIS time it is a manufacturer who has been making high-grade cast iron furnaces for more than twenty-five years and has fifteen acres under roof in his magnificent plant. And yet a steel furnace made for this cast iron furnace company in an outside steel furnace plant is now catalogued and offered for sale by it.

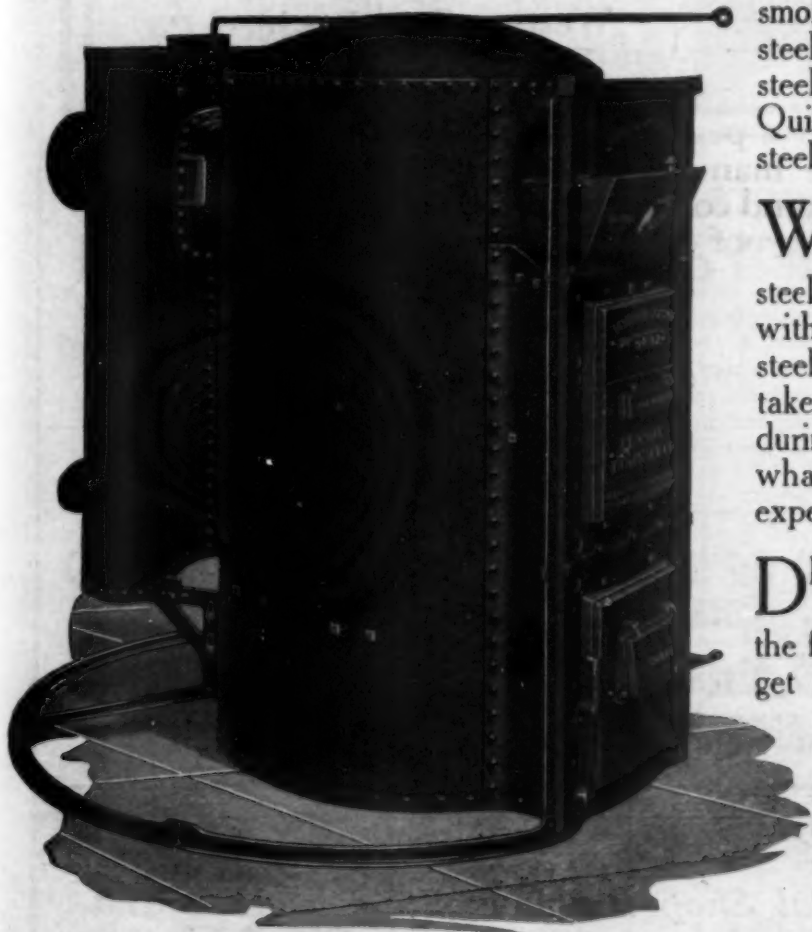
ANOTHER maker of cast iron furnaces who once boasted of the largest output of cast iron furnaces in America is cataloguing and offering this *same* steel furnace but under another name. It is a steel furnace made for several makers of cast iron furnaces whose plants are not suited to steel furnace manufacture but it is a new product, untested in the crucible of time.

MANY other makers of cast iron furnaces will come over to steel, and why shouldn't they? Firepots in steel furnaces can never crack. Casings and pipes do not have to be taken down for replacements. There are no packed joints to loosen and leak gas. Long

smoke travel and large radiating surface in steel furnaces saves fuel. The durability of steel makes possible the ten year guaranty. Quick radiating self cleaning quality of steel gives instant response to the fire.

WE are glad that the big makers of cast iron furnaces are coming over to steel, because over thirty years of pioneering with steel has shown the superior merit of steel in furnace construction. Many mistakes have been discovered and corrected during that time but others can find out what to avoid when they have had similar experience.

DEALERS, too, like manufacturers are coming over from cast iron to steel in the furnaces they sell. Those who would get the best steel furnace, the first to be guaranteed for ten years, the furnace that is made of the heaviest steel, the furnace that has never had a seam open or a head give out, under proper use, in thirty years, those dealers should get a franchise for the TORRID ZONE line.



The Lennox Furnace Company

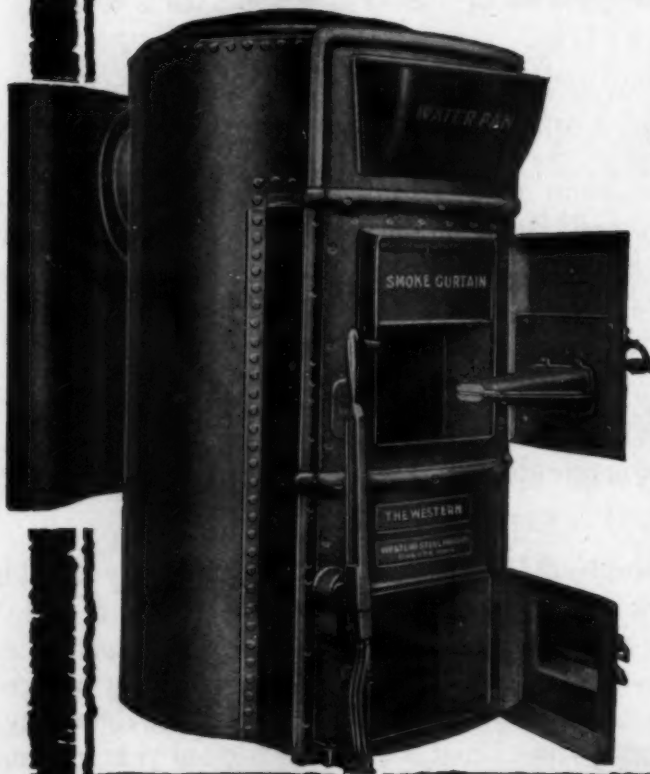
Marshalltown, Iowa Syracuse, New York

Published Weekly by American Artisan and Hardware Record, Inc., 630 South Michigan Avenue, Chicago, Illinois.
Entered as Second Class Matter June 25, 1887, at the Post Office at Chicago, Illinois, under act of March 3, 1879.

WHY THEY ARE

"Just What the Public Wants"

"Western"
Boiler Plate



Furnaces are just what the public wants, because they meet the every day needs of the average man in a practical rather than theoretical way.

They are:

Permanently gas tight. Built of heavy copper bearing boiler plate, with joints cold riveted and caulked, making the tightest and most durable construction known.

Economical in operation. Designed on a common sense plan, without useless frills, but including the essentials of economical combustion—hot blast gas consumer, V-baffle in radiator, large brushing surface.

Economical in first cost. Although quality is built into every part of the Western, its price is such that it even competes with a cast furnace.

Practical in design, with features which actually add value in service, such as corrugated top to take up expansion and contraction, and heavy double grates which are easily shaken from a standing position.

Time tested in cold northern climates, and absolutely guaranteed.

Ask for our special dealer's proposition, which includes long profits, easy terms, and a special selling plan with many advertising helps.

Western Steel Products Co.

130 Commonwealth Ave.

Duluth, Minn.

Cheat Your Prospects —and You Cheat Yourself

WHEN you sell a furnace you are in reality promising equipment which will give cheery warmth in every room—not in four out of five nor seven out of eight but every room in the house. Unless the furnace you sell does furnish the required heat for each room you are cheating your customer and cheating yourself—and, cheat yourself in this manner and your business will be short lived. Each installation will shriek the incompetency of yourself and your furnaces. You are bound to be so victimized unless you hold the agency for a real reputable heating unit. There are quite a few that will serve your purposes well, but we can honestly say that we believe a Floral City Agency will build for you the most profitable everlasting business.

QUEEN FURNACES possess utmost efficiency due to several exclusive features. They answer the question of "which furnace to buy". The advantage of adaptability to any job, a guarantee of long service and our policy of selling only to the trade makes our agency proposition ideal. Don't put off writing. Do it Today!

FLORAL CITY HEATER CO.

Main Office:
MONROE, MICHIGAN

Chicago Office:
1654 MONADNOCK BLDG.



An Efficient Sheet Metal Shop Employs Efficient Help and Gives These Men Efficient, Up-to-date Tools and Machinery

Mention AMERICAN ARTISAN in your reply—Thank you!

You don't sell one or
two features when
you sell ~

WISE
BACKED BY OVER TWENTY-FIVE YEARS'
EXPERIENCE IN MAKING GOOD FURNACES
WISE

YOU sell instead a truly fine and well balanced warm air heating system.

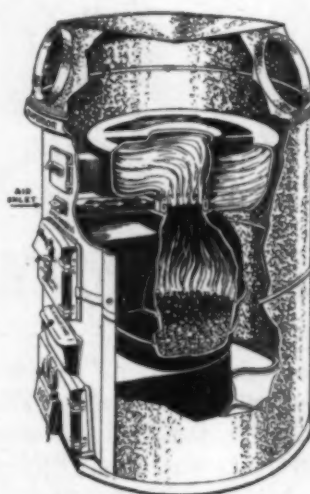
Such features as Lever shaker handle, immense self cleaning radiator, deep cup joints, large well fitting doors, perfectly balanced extra weight, corrugated and slotted fire pot, deep roomy ash pit, solid base ring and extra large water pan are all standard on WISE furnaces.

Instead of playing up one or two features, you sell a furnace that has numerous outstanding features.

WISE furnaces play an important part in the development of warm air heating contractors' business because of their undisputed quality. The long and successful record of WISE furnaces furnishes a background that guarantees satisfaction.

Write for the Wise catalog today
—Study WISE construction and
the WISE sales policy and you, too
will want to sell WISE furnaces.

The WISE FURNACE CO.
AKRON, OHIO



S. S. = \$ \$

THE SUPER SMOKELESS Furnace means dollars in your pocket. The dealer who sells them is in a distinct class—actually above competition. He can increase his business and get better prices for his work.

The SUPER SMOKELESS Furnace is the best investment a home owner can make. It eliminates the smoke nuisance, even with cheap soft coal, thus protecting health and property. It burns the smoke as valuable fuel, thus obtaining full heat value from the coal. This means a large saving in the amount of coal burned.

We are now telling the public the big story of clean, efficient and highly economical home heating through the medium of the SATURDAY EVENING POST. The result of this advertising is sure to be a nation-wide demand for the high-grade heating plant which radically cuts fuel costs. Big, new opportunities are being created for live-wire dealers who want to cash in on the merits of our SUPER-SMOKELESS Furnace.

Write TODAY for full information

UTICA HEATER COMPANY

"Pioneers in Smokeless Combustion"

UTICA, N. Y. - CHICAGO, ILL.

When writing mention AMERICAN ARTISAN—Thank you!

Weir

Steel Furnace

THE most successful warm air heating contractors sell only the highest grade furnaces. They do not sell the highest grade furnaces because they are successful, but they are successful because they are wise enough to sell only the highest quality furnaces.

Heating is a major item in a man's home building budget.

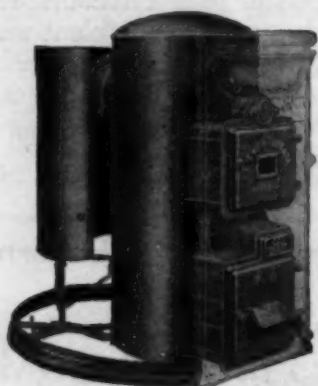
He will give much thought to it because he expects the heating plant to last as long as the house and he wants to be sure of economical and efficient heating.

And naturally he wants the best warm air heating plant.

The difference in price between the very poorest grade furnace on the market and the Weir is never enough to keep a man from choosing the Weir, the highest grade furnace made.

The Weir is guaranteed direct to the user by the most liberal guarantee ever issued on a furnace—a guarantee that covers the entire Weir furnace including all parts for FIVE YEARS. The Weir is in its 45th year—the oldest and yet, because it is ahead of the times, the newest steel furnace on the market.

Let the Weir work for you—write today for agency plans.



The MEYER FURNACE Co
Peoria, Illinois



What is Close Buying?

SOME men think that close buying means shaving the last cent on the cost of a furnace.

Successful furnace men have found that good buying means buying a good furnace, whose parts are so well fitted as to save time in erection.

—and to save a lot of complaints from the house owner later on.

The Moncrief is that kind of furnace, and it is not high priced either.

We would like to tell you further details

The

Henry Furnace & Foundry Co.

3471 E. 49th Street

CLEVELAND, OHIO

Manufacturers of single and double wall pipe and fittings, galvanized pipe and fittings, etc.

Eastern Sales Offices:

F. H. HANLON
Batavia, New York

W. S. McCREA
105 Federal St., N. E., Pittsburgh, Pa.

Western and Southern Distributors:

JOHNSON FURNACE CO.
Kansas City, Missouri

MONCRIEF FURNACE CO.
Atlanta, Ga.

MONCRIEF FURNACE & MFG. CO.
Dallas, Texas

MONCRIEF FURNACES

The "AFCO" Agency Is Worth Money To You!



Hundreds of progressive dealers are making good with the "AFCO" Agency because they have something more to sell than price.

In the first place the "AFCO" Boiler Plate Steel Furnace is the best combustion unit that money can buy and secondly when it is installed according to the Standard Code heating satisfaction is guaranteed.

"AFCO" Warm Air Heat is clean, moist, healthful heat—the kind that home owners like. The efficient "AFCO" Furnace also saves on the coal bills.

"AFCO" Heating Systems make real friends for Warm Air Heat and bring a better class of prospects to your shop.

Decide now to step out of the unprofitable, price competition business and make more money.

Write today for full particulars—there is no obligation.

Dept. 37

American Furnace Company

2719-31 Morgan St.

St. Louis, Mo.

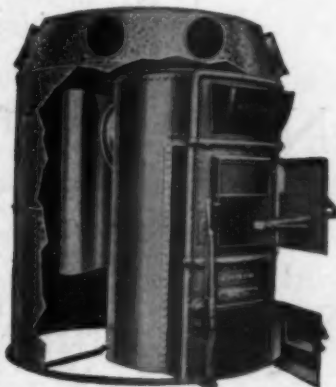
Standard Dealers Know in Advance



9 styles and 47 sizes of steel and cast iron furnaces carried in stock at all times. Nowhere else can you find such a variety to select from.

They are sufficient to meet demands from all classes of trade.

THAT every buyer will become a Booster. The furnaces shown on this page have proven their ability to return dollar for dollar to the consumer in extra service rendered. Standard Dealers are also assured of real profits by our Dealer Plan, which is different.



Furnace Supplies, such as the following, are nationally known as the Standard of Comparison:

HANDY PIPE & FITTINGS
R I NO STREAK REGISTERS
H & C No. 170-No. 190 REGISTERS
STAN-CO REGISTERS
STEEL & SEMI STEEL REGISTERS
WISS SNIPS
PEXTO TOOLS

Everything needed by the Furnace Installer

STANDARD FURNACE & SUPPLY CO.
OMAHA, NEBR.

Warehouse — Sioux City, Ia.

Notice
Their
Shape!



Smooth, easy curves,
No sharp turns,
No "choking"---

NO FRICTION!

If you haven't received
our new Catalogue (No.
45) ask us for one.

F. Meyer & Bro. Co.
1311-13 S. Adams St. Peoria, Ill.

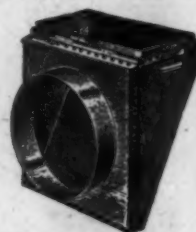
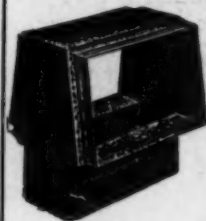
This Pipe **gives better service**

JUST take two sections of Chicago Pipe and snap them together—see for yourself how easily, quickly and firmly they fit together—see how strong CHICAGO Pipe is made and notice the extra weight and high quality of the material.

*Yes, we will send sample—just write today
for our Catalog No. 22 and price list.*

CHICAGO FURNACE SUPPLY CO.

1276-78-80-82 Clybourn Ave.
CHICAGO

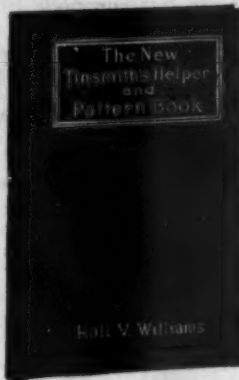


CHICAGO
FURNACE PIPE
AND FITTINGS

352
Pages

247
Figures

165
Tables



*Flexible
Leather
Binding*

*Measures
4½x5 in.*

One of the Best and Most Popular Books

on tinsmithing and elementary sheet metal work. This is the latest edition and the contents are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover.

This Book Covers Simple Geometry and Every Phase of Modern Pattern Cutting

from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings.

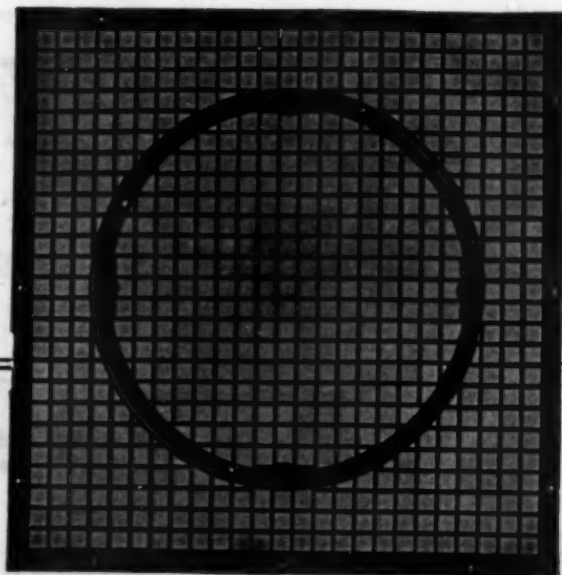
In fact an excellent all-around book for every man in the trade. Mr. Williams writes in an easy-to-read, helpful manner, giving you all the necessary details about each subject he handles.

You should add this widely read book to your collection now.

PRICE \$3.00

**AMERICAN ARTISAN
AND
HARDWARE RECORD**

620 South Michigan Avenue, Chicago, Ill.



*An unusually well made
and carefully finished
pipeless grating*

WALWORTH Duplex Register

THIS grating is run through the polishing machine *five complete turns* before it is sent to you.

It is by far the most popular pipeless grating on the market and its high quality is the reason.

The Walworth Duplex Grating is made in seven standard sizes from 22x24 to 45x45.

We carry immense stocks at all times in order to supply your needs promptly.

The design shown above is our Plain Lattice Design. It is very strong and durable and unusually neat.

Write today for complete catalog
and price list.

Made by the makers of

Walworth Semi-Steel Registers, Ventilators, Borders, Side Wall and Base Board, Registers and furnace Casing Rings

THE WALWORTH RUN FOUNDRY COMPANY

West 27th Street and N. Y. C. & St. L. R. R., Cleveland, Ohio

Distributors:

ROBINSON FURNACE CO., Chicago, Ill.

HART MFG. CO., Louisville, Ky.

PHILLIPS & BUTTORFF MFG. CO., Nashville, Tenn.

Eastern Representative:

PENN TINSMITH'S SUPPLY CO., Philadelphia, Pa.

THATCHER BOILERS-FURNACES-RANGES

Less Cost for Heat

Where economy must be considered in both installation and operating costs, solve the problem by installing a THATCHER "Pipeless" Furnace.

Through the single warm air register cut in the floor directly above the heater, the THATCHER "Pipeless" Furnace pours forth a constant flow of evenly heated washed air in sufficient quantity to keep every room at a comfortable, even temperature.

For new homes, the THATCHER "Pipeless" is an inexpensive and efficient installation that will give long years of service. For old homes, it can be easily and quickly installed without tearing down walls and ceilings—a big feature that you should emphasize and turn into additional profits for yourself.

Write today for detailed information
on the Thatcher "Pipeless", and let
us tell you how helpful our dealer
cooperation can be to you.

THE THATCHER COMPANY

formerly Thatcher Furnace Co.
Since 1850

Newark, N. J.

39-41 St. Francis Street

Chicago

341 N. Clark St.

New York

21 W. 44th St.



THATCHER "PIPELESS" FURNACE

All furnaces
are provided
with one-
piece steel
casing rings.

Both smoke
and clean out
connections
are made out-
side the air
chambers.

The inner
casing ex-
tends down
to the ash pit
bottom, form-
ing a very
rigid connec-
tion.

A restful night on Lake Erie

on one of the great ships of the **C & B Line** makes a pleasant break in your journey. A good bed in a clean, cool stateroom, a long, sound sleep and an appetizing breakfast in the morning.

Steamers

"SEEANDBEE" — "CITY OF ERIE" — "CITY OF BUFFALO"

Daily May 1st to November 14th

Eastern Standard Time

Leave Cleveland—9:00 P. M. | Leave Buffalo— 9:00 P. M.
Arrive Buffalo— 7:00 A. M. | Arrive Cleveland 7:00 A. M.

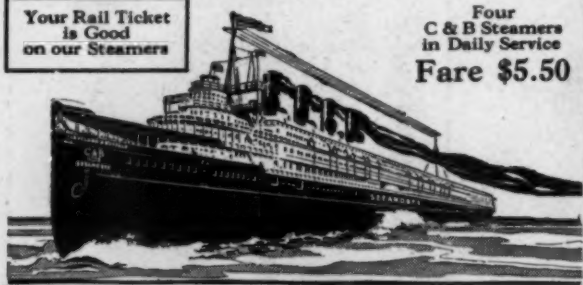
*Steamer "CITY OF BUFFALO" arrives 7:30 A. M.

Connections for Niagara Falls, Eastern and Canadian points. Ask your ticket agent or tourist agency for tickets via C & B Line. New Tourist Automobile Rate \$7.50 and up.

Send for free sectional puzzle chart of the Great Ship "SEEANDBEE" and 32-page booklet.

The Cleveland and Buffalo Transit Co.
Cleveland, Ohio

Your Rail Ticket
is Good
on our Steamers



Four
C & B Steamers
in Daily Service
Fare \$5.50

FURNACE

S T O V E

GUARANTEED
PERFECT FIT

REPAIRS

Large Complete Stock
Accurate. Prompt Service

NORTHWESTERN
STOVE REPAIR CO., CHICAGO

H E A T E R

BOILER

"American Seal"

FURNACE CEMENT

Roof Cement — Stove Putty
Plumbers Putty

PAINTS and SPECIALTIES

WILLIAM CONNORS PAINT MFG. CO.
TROY Established 1852 NEW YORK

JAMES L. PERKINS
Western Distributor
140 S. Dearborn St., Chicago, Ill.

BOLTS

WE MANUFACTURE A COMPLETE LINE
OF BOLT PRODUCTS, INCLUDING STOVE
BOLTS, CARRIAGE BOLTS, MACHINE
BOLTS, LAG BOLTS, NUTS, ETC. ALSO
STOVE RODS, SMALL RIVETS AND
HINGE PINS, CATALOG ON REQUEST.

THE KIRK-LATTY MFG. CO.
1971 W. 85th St. Cleveland, O.

PATTERNS

FOR STOVES AND HEATERS FIRST-CLASS
IN WOOD AND IRON

VEDDER PATTERN WORKS ESTABLISHED 1835 TROY, N. Y.

**PATTERNS FOR STOVES
AND HEATERS**

THE CLEVELAND CASTINGS PATTERN COMPANY
CLEVELAND, OHIO

IRON AND WOOD

STOVE PATTERNS

QUINCY PATTERN COMPANY
QUINCY, ILLINOIS

Advertising Is News In the Business Papers

THE advertising section of the class, trade or technical magazine is a news section.

It supplies vocational information that supplements and dovetails with that supplied in the editorial pages.

The latter supply the answer to the question, "How?" The former tell "what" and "where."

If your announcement is not listed in the business papers covering your field, the answer to those questions is being supplied by your competitors.

The news of the advertising section is too important to the reader not to be important to the advertiser as well.

It is important to you.

BOOMER

THIS is our latest addition to the Boomer line. We heartily recommend it for your favorable consideration.

The severe tests we have given this furnace have proven its durability. The unsolicited reports we received from users last winter have been most flattering.

For durability, economy, easy to operate, easy to set up and the low price at which we offer this furnace, you will make no mistake in arranging for the agency.

THE HESS-SNYDER CO.
MASSILLON, OHIO

Makers of BOOMER FURNACES for Forty-Three Years



The Improved Air Duct Increases the Heating Capacity about 30 per cent in our

WASHINGTON HOME FURNACE



Placed above floor, hence saves the cost of digging cellar. Produces circulating moist heat for 3 to 6 rooms. Only stove or furnace ever built without name plate or advertisement on the outside. (Name is molded on inside of front feed door.) Beautiful grained mahogany finish harmonizes with finest mahogany furniture. (Also in plain finish for one-third less.) Made in the same plant in which we manufacture 100,000 Washington stoves and ranges annually. Can ship promptly as we now manufacture fifty furnaces per day. *Nationally Recognized and Advertised.* Correct location of water pan. Most beautiful and most expensively constructed furnace now on the market. Write today for exclusive agency plan, your district may be open.

Gray & Dudley Company, Nashville, Tennessee

"We melt more than 100,000 Pounds of Southern Pig Iron per Day"

ROBINSON SMOKE CONSUMER

ELIMINATES { SMOKE
SOOT

EASY to install and it fits any furnace. Easy to operate and economical in price.

A real money maker—write today for full information.

Made by the makers of ROBINSON STEEL FURNACES

THE A. H. ROBINSON COMPANY
5103 Detroit Ave. CLEVELAND, OHIO



PAT.



It will pay you To Buy your Stove Trimmings From Us

LARGE selection — beautifully finished. Made from our own steel.

Let us quote you

THE AMERICAN TUBE & STAMPING PLANT

The Stanley Works
Bridgeport, Conn.

When writing mention AMERICAN ARTISAN—Thank you!

Published to serve
the
Warm Air Furnace,
Sheet Metal, Roofing,
Stove and Hardware
Industries

Founded 1880

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CHICAGO, AUGUST 28, 1926.

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AN ACHIEVEMENT

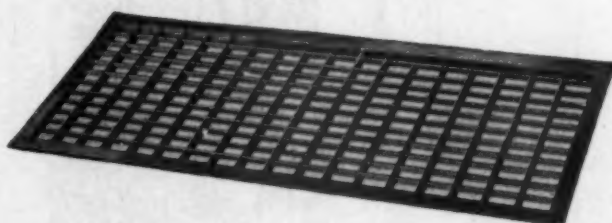
An explanatory note regarding service to readers of AMERICAN ARTISAN. This paper is now nearing the completion of a half century of service. For almost fifty years it has catered to the needs of the men in the industries which it represents. At no time during its long and successful career has AMERICAN ARTISAN been in a better position to render complete, adequate service to its readers than it is today. In addition to the matter contained in our regular weekly publication, we maintain Service Departments for the use of our readers. If you have a problem to solve, we courteously invite you to submit it to us for solution. In what better way can we learn of your problems than from you direct?

Finally

YOUR kind of a *metal* cold air face—Equally good for warm air outlets—Easy and inexpensive to install, *rigid*, practically unbreakable, good looking—

INDEPENDENT "FABRIKATED" REGISTER FACES

82% Open Area



Cold Air Faces

For Round Pipes	Face Size Floor Opening Inches	Open Area Square Inches	LIST PRICES		
			Black Japan	Oak Finish	Ox. Cop. Plated
14 inch pipe Capacity of pipe 154 sq. in.	8x24 8x30 14x14	155 194 157	\$ 3.00 3.60 4.05	\$ 2.15 3.85 5.60	\$ 4.40 5.00 7.15
16 inch pipe Capacity of pipe 201 sq. in.	8x30 9x30 10x24 16x16	194 219 194 206	3.60 3.70 3.60 5.10	3.85 3.95 3.75 6.20	5.00 5.10 5.00 9.10
18 inch pipe Capacity of pipe 254 sq. in.	10x30 11x30 12x24 12x30 18x18	243 267 233 292 262	3.75 3.85 3.75 4.00 7.20	4.00 4.10 4.00 4.50 9.05	5.50 5.60 5.50 6.00 12.45
20 inch pipe Capacity of pipe 314 sq. in.	12x30 13x30 14x30 20x20	292 316 340 323	4.00 4.25 7.70 8.60	4.50 4.75 8.55 10.00	6.00 6.25 15.45 13.00
22 inch pipe Capacity of pipe 380 sq. in.	16x30 22x22	388 392	9.50 11.40	10.60 14.25	16.00 19.40
24 inch pipe Capacity of pipe 452 sq. in.	18x30 20x30 24x24	427 486 468	9.85 10.30 12.00	11.15 12.00 15.00	17.15 18.00 22.00

Warm Air Faces

Round Pipe Diameter Inches	Round Pipe Square Inches	Proper "Fabrikated" Face Size	Face Square Inches	LIST PRICES Black Japan	Ox. Cop. Plated
12	113	12x12	115	\$ 2.70	\$ 5.05
14	154	14x14	157	4.05	7.15
16	201	16x16	206	5.10	9.10
18	254	18x18	262	7.20	12.45
20	314	20x20	323	8.60	13.00
22	380	22x22	392	11.40	19.40
24	452	24x24	468	12.00	22.00
26	530	26x26	548	16.50	27.50
28	616	28x28	637	19.00	32.50
30	707	30x30	731	21.50	37.00
32	804	32x32	823	26.00	49.00
34	907	34x34	940	30.00	54.00
36	1018	36x36	1055	35.00	60.00
38	1134	38x38	1176	43.50	71.00
40	1256	40x40	1303	50.00	85.00

Additional Sizes

"Fabrikated" Faces can be furnished in any size. Do not hesitate to order if the size you want is not shown.

Sold at Prices You Can Afford to Pay
Ask for Discounts

Independent Register & Mfg. Co.
3741 East 93rd St. Cleveland, Ohio



Nesco Sheets For 50,000 Roofs



The Nesco Mills Employ 3500 Workers.
The Nesco Mills Cover 110 Acres.
Nesco's Gross Annual Capacity is 400,000
Tons of Ingots.



10 open hearth furnaces [where Nesco makes its own ingots], 2 plate mills, 1 blooming mill, 1 sheet bar mill, 1 jobbing mill, 20 tin mills, 14 sheet mills and 6 galvanizing pots indicate our ability to meet large demand with prompt service.

It's just a sidelight, of course, but in 1925 the Nesco Mills [in addition to other sheet and plate output] supplied enough galvanized sheets to roof 50,000 buildings — 2500 square feet to the roof.

NATIONAL ENAMELING & STAMPING CO., INC. • GRANITE CITY STEEL WORKS • GRANITE CITY, ILL.
Chicago • Dallas • Davenport • Denver • Kansas City • Los Angeles
Memphis • St. Paul • St. Louis • Salt Lake City • San Francisco • Seattle

CONTRIBUTING MEMBER
SHEET STEEL

NESCO

Galvanized, Blue Annealed and Black Sheets • Plates and Tin Plate

SHEETS

When writing mention AMERICAN ARTISAN—Thank you!



American Artisan and Hardware Record



Vol. 92.

CHICAGO, AUGUST 28, 1926

No. 9.



Illustrating a box type flume made up in section, that can be built to any size, and easily installed. Note that the extended wings on top of the bank bring the surface runoff into the flume which delivers the water down and away from the banks in such a way to prevent undermining. The purpose of this flume shown on the photograph is to stop the gully from further development to save the farm and home.

Sheet Metal Now Prevents Surface Soils from Erosive Processes

*Farm Lands and Highway Foundations
No Longer Need Suffer Hazards of Erosion*

By GEORGE J. DUERR

SOIL erosion and methods for preventing it have occupied the attention of man for centuries. There was in former times what was known as an erosionist, or one who supported the theory that the contour of the earth was caused by erosion instead of the work of subterranean forces. That theory is

now obsolete, but its existence in the historical records shows us that the subject of erosion has been given a great deal of consideration.

Erosion is expensive. Before the system of jetties was constructed in the mouth of the Mississippi river, the United States government spent thousands of dollars annually to

keep that portion of the river open to traffic. Even now the country as a whole loses many hundreds of thousands of dollars in the loss of fertile top soils that are carried away by surface waters. The jetties in the mouth of the river effectually prevent the soil carried in suspension in the water from being

dropped in the mouth of the river, but they do not prevent the erosion from taking place, which is infinitely a more to be desired objective to attain.

Not only are farms cut up by the

others not. The chief difficulty was in finding some material that would permanently hold the soil in place, while at the same time providing a smooth surface upon which the water could run off to the drain without

Muehleisen, president of the National Soil Conservation Company, Alma, Wisconsin, after much discouraging experimental work, to discover and develop a sheet metal flume which, it is believed, has successfully solved the problem of preventing soil erosion.

E. Wallace Evans, secretary of the National Soil Conservation Company, has very clearly defined the work of the National Soil Conservation Company.

He says:

"This work was first conceived by our president, Mr. Muehleisen, about thirteen years ago, when he introduced the first flume constructed out of wood and set up in a ditch which was threatening to undermine his house and barn on his farm. The experiment worked so well that Mr. Muehleisen next introduced a flume constructed out of wood and steel and finally out of sheet steel entirely. Our flumes at the present time are constructed entirely of sheet steel, supported by steel stakes and held in place by anchors and turnbuckles. In January, 1924, Mr. Muehleisen organized a company to more extensively carry on his work



Showing an all steel flume of the half circle type. This flume was installed to head of a gully to prevent that gully from crossing the highway.

process of erosion, often leaving enormous gullies where once a flat fertile soil existed, but state highways are constantly being ruined because no effective method of carrying the surface water from them had been discovered until recently.

Railroads too, especially those running through the mountainous portions of the country, have suffered from the effects of erosion. Rarely does a rainy season pass without wrecks occurring to passenger trains, with many people killed or injured, because the flood waters have carried away the soil and gravel foundations under the rails.

Who is there who does not know the difficulties which the farmer experiences in harvesting his grain because sudden rain storms have washed out great gullies in his fields, making it extremely hazardous if not entirely impossible for him to get his heavy harvesting machinery onto the land.

Many methods have been tried to stop erosion of farm lands; some of these have been quite effective,

digging its way into the soil. Many wooden water runs have been tried, but these soon rotted out, leaving

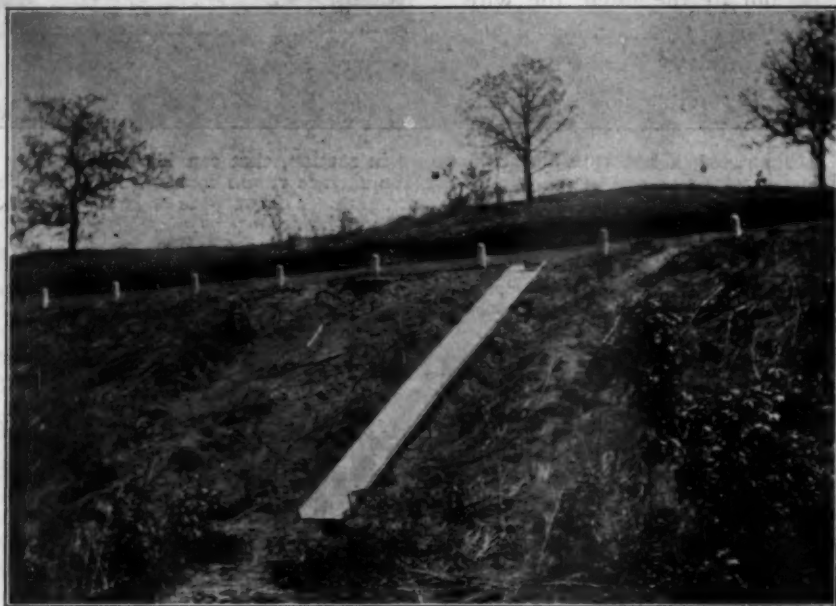


Photo No. 3 shows an all metal road shoulder drain. The purpose of this drain is to carry the surface water which falls on the road during rain storms off the road, to prevent bank erosion. With this system it is important that the road be shouldered, and the drain placed at the relief points.

the erosive processes as triumphant as ever.

It remained for Mr. Gottlieb

of correcting soil erosion by means of his steel flumes and steel dams. Since the organization of this com-

pany we have been kept busy installing our product, all to the complete satisfaction of the purchaser.

"To give you a better idea of the work we are doing, and to give you an idea of the cost of flume installation in comparison with the value it renders in the prevention of soil erosion in dollars, I refer you to the three photographs.

"From these photographs you can readily see that our patented flume carries the water down to the level of the ditch or gully and away from the head of the ditch. At the head of the ditch and back four or six feet, we set in what we call a head-plate, to which is attached wings or dike, constructed also of sheet steel. This headplate and wings are set in concrete and down into the ground about a foot, so as to make them secure. To this head-plate we then bolt on our regular standard lengths of straight flume until the bottom of the ditch is reached. At the bottom we then fasten to the end of the flume an 'apron,' at the extreme end of which is fastened a foot or two of coarse, heavy woven wire. This apron and wire is to bring the water down to and on a level with the bottom of the ditch, the wire serving to stop the rushing of the water and breaking its flow.

"To a flat flume, like the one shown attached to the culvert, we do not use a head-plate nor an apron. In this case, the flume is used primarily to take the water as it comes through the opening in the bridge and carry it away from the bridge so that the rushing water can not undermine the bridge. As you probably have noticed in many instances, the water after dropping from a considerable height, churns in a backward movement, thereby washing away any dirt and undermining a structure, such as a bridge.

"Soil erosion on highways is a big problem and our company has just recently invented a small surface flume to take care of surface waters from highways. We look for a big future for this small surface flume. The next time you drive out into the country on a dirt or gravel highway, just glance along the side

of the road and notice the many small ditches made by the surface water running down to seek its level. In time these small ditches grow and it is not long until they have grown to such a size that they endanger travel and ruin the highway. By installing one of our small surface flumes, this fault can be

remedied. It is authentically stated that about 60 per cent of the farms in this country are affected by soil erosion, so we believe that we have a big job and a big field to work in. So far we have found nothing to equal sheet steel for the making of our flumes. It is strong, durable and not too expensive."

Frederick Sherwood Kretsinger Passes On—82 Years of Age

*His Death Occurred Suddenly While
on a Business Trip to Cleveland*

The kindly smile and friendly hand clasp of Frederick Sherwood Kretsinger will for the first time in many years be missed at the coming convention of the American Hard-

There is an old saying "like father, like son" and in the case of Frederick Sherwood Kretsinger, distinguished in the hardware trade as a genius of sales management, manufacturing and commercial organization, this is especially true. Almost a century ago, the father, W. H. Kretsinger, dealt in hardware specialties in Chicago, and in 1862 after a term of apprenticeship, took his son into the firm, changing the name to W. H. Kretsinger and Son.

In 1870 father and son engaged in the manufacturing business at Fort Madison, Iowa, under the name of Soule, Kretsinger and Company, which later was changed to the Iowa Farming Tool Company, with young Kretsinger manager of the sales department.

Upon the death of the father, the son became president of the company.

In 1901, seventeen firms, including the Iowa Farming Tool Company, merged, forming the American Fork and Hoe Company. After serving one year as vice-president and superintendent of the manufacturing department, F. S. Kretsinger in 1902 was elected president of the company, holding this office until 1907, when he retired to become Chairman of the Board.

Frederick Sherwood Kretsinger was one of the founders of the



Frederick Sherwood Kretsinger.

ware Manufacturers', for Mr. Kretsinger has passed on. His death which occurred at Cleveland, Sunday, August 22nd, his 82nd birthday, came very suddenly and was directly due to a heart attack.

Mr. Kretsinger, whose home was in Evanston, Illinois, had gone to Cleveland on business connected with the American Fork and Hoe Company, in which company he was Chairman of the Board, and in spite of his advanced years, quite active.

American Hardware Manufacturers' Association, its first vice-president; then later president and at the time of his death a member of the Advisory Board. To him, the younger men in the organization turned for advice for he was known

for his ability to handle serious situations, and never shirked responsibilities.

He was laid to rest at Rosehill Cemetery, Chicago, Tuesday, August 24th, leaving his widow, Mrs. Grace Kretsinger, a son, William

H., of Cleveland, a sister, Mrs. Grace Stewart of Fort Madison, Iowa, and a host of friends to mourn him.

Frederick Sherwood Kretsinger has passed on but his memory will live.

Developing a Pattern for Sheet Metal Chimney Top

Article in Response to Inquiry of E. L. Brooks of Liberty, Saskatchewan

By O. W. KOTHE, Principal St. Louis Technical Institute

RESPONDING to the inquiry of E. L. Brooks, of Liberty, Saskatchewan, for a 7-inch tee connection according to sketch I submit accompanying drawing will give the proper solution. In making chimney tops of this kind, it does not matter what the diameter is or the rise of the stem A, just so the collar is enough for convenient working. In the same way it does not matter what the length of the middle pipe B is—the shorter the better so as not to give too much overhang. The angle of the inclined flues C is also optional, but about 70 degrees is a good angle, although many folks make them to a 60 degree angle.

The main object of a chimney top of this kind is to prevent downdraft and it is claimed they are as good as anything else that can be made unless the stack is run above the highest obstruction. So the length of the flues C can be made at pleasure, or possibly from 4 to 6 inches above and below the horizontal pipe B as 1'-a and 7'-c. Most shops cut off the top and bottom of these flues to a horizontal line, as a-b and C-d, while other folks let them square pipe ends.

So the first thing to do is to draw the vertical and horizontal center lines, and at the intersections 4" describe the section of the pipe, 7 inches in this case. This circle can also be described in the stem A; but we place it as at B because from it

we can draw lines in several directions from the one section. Now divide this circle into any number of equal spaces, or 12 in this case, and from each point extend lines both vertically and horizontally. This enables drawing the outline for stem A and also the middle pipe B.

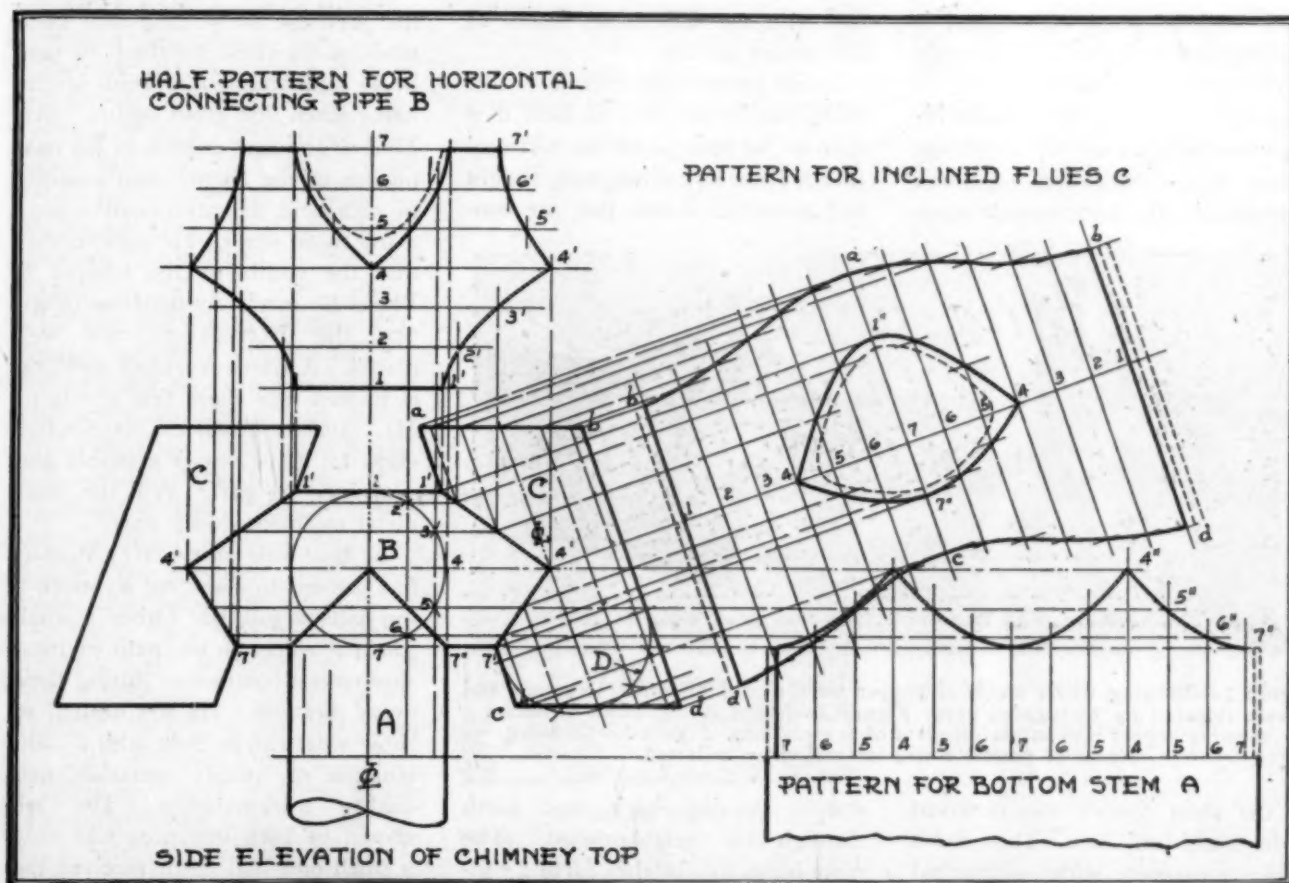
Next measure the length of the top as 1-1' and then draw the slant line as a-c to any desired angle, or about 70 degrees. Next measure over the center line and the diameter line, so all pipes have the same diameter. Often the half section D is of service in placing lines and points on the surface. But with the center line established; the miter line 1'-4'-7' is drawn between the intersecting points. Observe the section D must be drawn square or at right angles to the line a-c, and from all points in the circle the lines are drawn parallel to a-c to intersect the base lines a-b and c-d as shown. This completes the working drawing in order to develop the patterns.

In setting out the patterns there are two that are quite necessary, and that is the stem, and the middle pipe B. The flues C can be easily made out of straight pipe and then cut off. The same holds true with the several openings in the patterns—most workmen mark them out after the pipes are formed up and held together. So in starting the pattern for the stem A, measure off the stretchout or girth for pipe, or pick the spaces, as 1-2-3-4-5-6-7 for

section B of circle, and then step them off on a straight line as 7-7. From each of these points, erect lines, and then from all points in the miter 4"-7" carry over horizontal lines to cut off those of pattern of similar number as 7-7"; 6-6"; 5-5"; 4-4", etc. After this sketch a uniform free hand curve through these points, and you have the pattern for stem.

The middle pipe B must have the same circumference as stem A, and so the spaces from section B are set off as 1 to 7 above elevation. Through these points horizontal lines are drawn, and then from each point in the miter lines 1'-4'-7' erect lines to cross lines in stretchout of similar number, as at 1'-2'-3'-4', etc. Sketch a uniform curve through these points, and the outline for pattern is finished. The opening is developed by erecting lines from each of the points in the miter line 4"-7".

To develop the patterns for the side flues C, square out a line, as 1-1, at right angles to the flue, as a-c, and on this line step off the stretchout for the pipe. After this square lines both ways so as to be square to 1-1 or parallel to a-c. Observe, where the lines from section D intersect the base lines a-b and c-d, also the miter lines 1'-4'-7'. When these points have been projected into stretchout so they are parallel with line 1-1; you can draw the outline of pattern.



Patterns for Chimney Top

On large work where the drafting board projecting methods are difficult—it is better to use a pair of dividers and transfer the various

lengths from elevation into pattern. The main point is to make the lines in pattern of the same length as they are in elevation; taking care so we

work from proper base lines. All patterns should be developed net—so all edges for seaming and edging must be allowed extra.

Thirty-Six Year Old Copper Roof Now Doing Service on Second Building

Was Subjected to Ravages of Sulphurous Smelter Fumes—Also Fumes from Railroad Engines and Steam Hoists

By GEORGE J. DUERR

AN unusual degree of interest attaches to the story of the service which the sheet copper roof, about to be described, has rendered its owners. The roof has a romance all of its own, as well. The story is told by J. C. Moebus, Butte, Montana.

In 1890, Mr. Moebus and his brother were engaged by one of the early day copper mining companies operating in that section of the country to cover one of their office buildings "on location" with a cop-

per roof. The company, of course, furnished the material.

Until this time the Moebus brothers of the South Butte Hardware Company had never had anything to do with a copper roof, they having confined their major efforts to tin plate and other types of tin roofing. They had won considerable of a reputation in their community for always doing high-grade work. They took great pride in any work which they did, and as they were about to put on one of

the most expensive types of roofing—the copper roof—they took extra pains with their work. Suffice it to say that the roof was duly installed. That was in 1890.

In 1899 the old copper company was absorbed by one of the largest copper mining companies in the country. The old smelter was torn down and all that was left of the original plant was the office building which had been covered by Moebus brothers with the copper roof. This structure was in such

good state of preservation that it was retained and used as a storage house by the new owners.

In spite of the fact that this building was being used as a storage house, it was constantly neglected. Photograph No. 1 shows how some

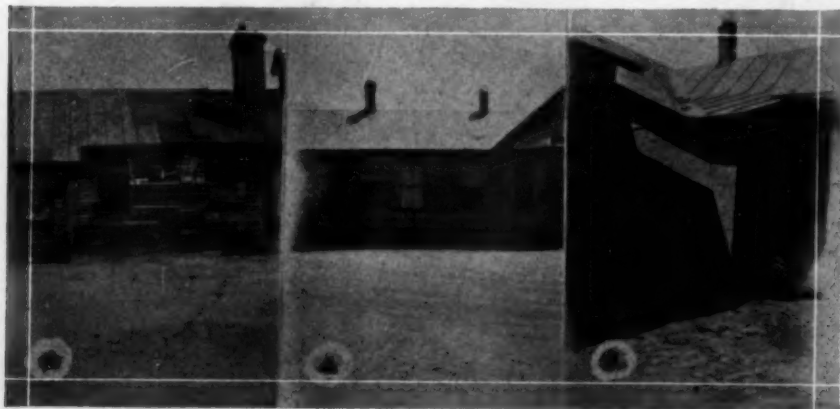


Figure 1.—Showing where strips of copper were ripped off office structure and were replaced by corrugated iron. Figure 2.—Front of old office structure showing copper roof in perfect state of preservation. Figure 3.—Showing corner of pocket where ice and snow collected.

of the sheet copper was removed by boys and junk men. These holes were re-covered with corrugated iron. However, photograph No. 2 shows the front of the office building and its roof to be in very good condition. Illustration No. 3 shows the north side with a double pitch roof and valley, where the snow and ice would fill in during the winter time.

The remarkable thing about the installation of this copper roof was that not a drop of solder was used in putting it on. The Moebus brothers do not believe in using solder, except in very extreme cases, when erecting copper roofing.

In spite of its all too apparent neglect, this copper roof has given perfect satisfaction for the 33 years of its existence.

In 1923 the old office structure was razed. At this time, however, Mr. Moebus was engaged by the copper company to remove the roof and place it upon the company residence, as shown in illustration No. 4.

From the foregoing story it is seen that the sheet copper roof referred to was put to a hard test. For a number of years while it was doing service on the old office structure it was coming in constant con-

tact with the sulphurous fumes of the copper smelter.

In its present capacity it is also being put to the test, as here it is open to the ravages of the soft coal smoke from switch engines, freight and passenger trains that are con-

stantly passing back and forth through the neighborhood. The mine hoist, too, belches forth a constant and large volume of black smoke. And so you have a copper roof that has served for 33 years on one building, then removed and is now in its third year of service on the second.

stantly passing back and forth through the neighborhood. The mine hoist, too, belches forth a con-

stantly passing back and forth through the neighborhood. The mine hoist, too, belches forth a constant and large volume of black smoke. And so you have a copper roof that has served for 33 years on one building, then removed and is now in its third year of service on the second.



Figure 4.—Residence of copper company upon which the old copper roof was placed after it had served thirty-three years on the old office structure. Its state of preservation is still perfect after three years' service on the residence.

stant and large volume of black smoke. And so you have a copper roof that has served for 33 years on one building, then removed and is now in its third year of service on the second.

Mr. Moebus has expressed the wish that, when the building upon which the copper roof is now doing service is torn down, he be given

the privilege of putting this same roof on its third building, in case he is still among the land of the living when that event occurs. Mr. Moebus has thus expressed his confidence in the copper roof's ability to withstand the ravages of a good many more years. He says further that the words of the Copper & Brass Research Association (Copper, the Everlasting) are well placed. A whole world of meaning is packed into these few words of Mr. Moebus which are hereinafter quoted: "Give copper a chance and it will do its part. Will the sheet metal mechanic do his part?"

In this little story, Mr. Moebus has desired to show not so much a big artistic job, but rather a small job that comes in the path of most sheet metal contractors during their every day life. He has desired to show what can be done with a combination of quality materials and quality workmanship. The job shown in both instances was only a small one, and yet it received the same consideration and thought that a much larger job would have received by the same contractor.

Mr. Moebus' big contention is that in many instances the architect has drawn up his plans in such a way that it was almost out of the question for the contractor to do a satisfactory piece of work. From this is seen the great need for the

architect to get together with the contractor for consultation.

However, he also realizes that the architect is not always to blame for the failure of a job to render the service that has been expected of it. In his opinion the majority of failures are caused by shoddy workmanship on the part of the mechanic.

In one particular instance, Mr. Moebus had been called to another city to check up on a large copper roof which covered a state building. The roof in question had only been installed about three years and a half at the time of the inspection and was already going to pieces, although the structure had been erected to endure a century or more at the least. The roof was a failure because poor workmanship had made it a failure. If the contractor who laid the roof in the first place had been consulted about it failure to stand up, his reply would in all probability have been, as in so many instances, that copper sheeting is no good as a roofing material. On the other hand, everyone who knows anything at all about roofing materials, also knows that this is contrary to fact. The same game is played with tin plate, galvanized iron and sheet zinc.

Conditions were so bad in Montana for a time, says Mr. Moebus, that a stove repair shop got the contract to put on a copper roof. This is in no way deprecating the stove repair man or anyone else as such, but reason tells that because a man is a good stove repair man, he is not necessarily capable of laying a sheet copper, or any other type, roof correctly.

From this story it is seen that the sheet metal contractor must work hard to get the architect to work with him. If he can convince the architect that the materials which he handles are second to none for the field in which he works, and that failures of those materials in some instances are due to poor workmanship on the part of the individual contractor and not to any inferiority in the materials themselves, he will get back the work which rightfully belongs to the

sheet metal contractor. He will do more. He will expand his own sphere of activity.

TO AMERICAN ARTISAN:

We have just opened a shop here so you can tell the world through your Best Trade Journal on Earth; and I know for I have read it for 25 years and it is getting better each year.

Please change my address from Route No. 1 Box 525½ to P. O. Box 382—22nd Street Station.

GUST BAKER,
Greaney and Baker.
St. Petersburg, Florida,
August 21, 1926.



Monel Metal.

From Central Sheet Metal and Roofing Company, 66 South Jefferson Avenue, Battle Creek, Michigan.

Kindly inform us where we can purchase monel metal.

Ans.—Steel Sales Corporation, 129 South Jefferson Street, Chicago.

Automatic Draft Regulators.

From Geo. D. Roper Corporation, Rockford, Illinois.

Can you tell us who makes automatic draft regulators for use on gas fired warm air furnaces?

Ans.—Honeywell Heating Specialties Company, Wabash, Indiana; Minneapolis Heat Regulator Company, 410 North Michigan Avenue, Chicago, Illinois, and Powers Regulator Company, 2720 Greenview Avenue, Chicago, Illinois.

Repairs for "Model" Boiler.

From Hoffmann's Tin Shop, P. O. Box 42, New Buffalo, Michigan.

We should like to know who makes the steam boiler formerly made by the Model Heating Company, as we want repairs for it.

Ans.—Richmond Radiator Company, 410 North Michigan Avenue, Chicago, Illinois.

Electric Controls for Furnaces.

From A. Scheid and Son, Inglewood, California.

Kindly inform us who makes electric controls or thermostats for warm air furnaces.

Ans.—Honeywell Heating Spe-

cialties Company, Wabash, Indiana, and Minneapolis Heat Regulator Company, 2747 4th Street, Minneapolis, Minnesota.

"Great American" Lawn Mower.

From Magin Hardware, 106 Rockton Avenue, Rockford, Illinois.

Can you tell us who makes the "Great American" lawn mower.

Ans.—Pennsylvania Lawn Mower Works, 1615 North 23rd Street, Philadelphia, Pennsylvania.

Raised or Stamped Sheet Metal Letters.

From W. J. Vierck and Son, East State at North First Street, Rockford, Illinois.

Can you inform me who makes pressed stamped or raised letters of sheet metal, to be 8 or 18 inches high?

Ans. — Friedley-Voshardt Company, 733 South Halsted Street, Chicago, Illinois.

"Hero" Heating Stove.

From Hero Furnace Company, Sycamore, Illinois.

We often have calls for repairs for the "Hero" heating stove, and would like to know who makes it.

Ans.—Cribben and Sexton Company, 680 North Sacramento, Chicago, Illinois.

Solid Rubber.

From L. R. Hamman, 507 East Prairie Avenue, Decatur, Illinois.

Where can I purchase solid rubber approximately 1½x3x31 inches for hand asphalt spreaders?

Ans. — Atlantic India Rubber Works, 1453 West Van Buren Street, and The Vulcanized Rubber Co., Inc., 1721 Republic Bldg., both of Chicago.

Used Sheet Metal Machinery.

From Gust Baker, Box 382, 22nd Street Station, St. Petersburg, Florida.

Where can I buy used sheet metal machinery?

Ans. — Maplewood Machinery Company, 2638 Fullerton Avenue, and B. L. Saltzman, 524 West Van Buren Street; both of Chicago.

"Jewel" Heat Control.

From Accurate Sheet Metal Works, 2432 Milwaukee Avenue, Chicago, Illinois.

Please tell us who makes the "Jewel" heat control.

Ans.—It is now made by Honeywell Heating Specialties Company, Wabash, Indiana.



Grand Rapids Sheet Metal and Heating Engineers Forgot Business for a Day

J. J. Sweet, President and I. Lammers, Secretary Lead the Merry Making

By ETTA COHN

I heard a good one on Ros and Ike Strong of the Homer Furnace Company. Do not know whether to tell it or not, but they both are such good fellows, I am almost tempted to do so. No, I guess I had better not, but next time you see either of them, just ask them what happened on the way to Grand Rapids last Friday night.

Yes, we certainly did attend the annual outing of the Grand Rapids Sheet Metal and Heating Engineers, at Camp Lake, Grand Rapids, Saturday, August 21st, altho if it had been up to Ike Lammers, we might have still been on the way.

Now, here I am with my cart before my horse. The Strongs, Ros and his family, Ike Strong and their advertising man, B. T. Jeffrey, drove over from Coldwater, Friday night, Ros and Ike were in one car, and that is when the "great adventure" happened. It was somewhere between Coldwater and Battle Creek. Well, just ask them and you will have all the details.

The Artisan folks drove up from Chicago Friday night, or we should say Friday night and Saturday morning, as we didn't reach the Pantlind Hotel until 3 A. M. and then what a time we had finding something to eat.

Ike Lammers, truly hospitable like

all that Michigan gang, called for us at one o'clock and lead the way, the Strongs following us in their car. Well, we rode and we rode and we

rode, but asked no questions, as of course Ike Lammers knew the way.

Suddenly we saw Ike slow down, talk to several men, and we started



1.—The Most Popular Ederle of All. 2.—Blindfolded and "Bibbed" They Awaited Their Fate. 3.—Evidently Frank and Gus Ederle Saw Something or Somebody Attractive in the Distance. 4.—Practicing. 5.—Douglas Strong Enjoyed His Dip. 6.—Pitching the Shoes.

forward again, or rather backward, as Ike had forgotten to turn. Goodness knows how many miles we rode out the way.

Lunch was scheduled for one o'clock, and we were sure worried, but they waited for us, and boy, did we eat. Spring chicken fricassed with biscuit, mashed potatoes, green peas and carrots, blue berry pie—in real man sized portions, and no one to look cross if you took a second or even a third helping. Cigarettes and cigars as usual were passed to the men, and we women were each given a box of candy. Between courses, we all sang, in tune and out of tune, but nobody thought of harmony—all we wanted was to show how happy we were.

They didn't even wait for speeches, but hustled us out to get our pictures taken, and then the real fun began. Games were played, greetings exchanged, and of course everybody had to shake hands with Frank Ederle, and exclaim at how wonderfully well Mrs. Frank looks, in spite of the serious illness she has just gone through.

The "Peanut Game" contest was confined to the ladies. Such a wild time. There were about one hundred and eighty-one peanuts in the sack, and the judging ranged all the way from 100 to 452. No, I won't tell you what I turned in, but I certainly wasn't stingy. Mrs. Delnay and Mrs. Billan, two red-headed sisters-in-law were tied for the prize. Mrs. Delnay was the lucky one and was presented with a big flashlight.

You can't keep the Ederles down. Gus Ederle and Ike Lammers walked away with the rules and pliers in the horse shoe pitching contest.

Ed Dyksterhouse won the tinnerns snips for judging the number of cigars left in the box after it had been passed around at luncheon. Mat Friedman might have won it, if he hadn't listened to Mrs. Florence Proskauer of Chicago, who insisted that he change his number.

When you have nothing else to do, just get a half dozen clothespins, and see how many you can

drop from your chin into a milk bottle. It isn't near as easy as it looks. Mrs. E. E. Behler and Mrs. Dyksterhouse were tied for the honors, having each succeeded in getting two of the six into the bottle, but in the drawing match for the prize, Mrs. Behler won out.

Mrs. Proskauer went home richer by one pair of silk hose, because she threw the ball into the washtub of water once out of three times. Mrs. Ros Strong tied, but lost out on the

second throwing. Miss Cohn fell down completely on throwing the ball into the tub, but she aimed right when she threw the ball at Frank Ederle.

It certainly was a dirty trick to mess up the contestants in the marsh mallow feeding contest the way they did, but it gave us all a good laugh. A. J. Nydan won the casting rod and Mrs. Oole the strong box, because they were so quick, but all the entrants were allowed to keep the beautiful red and blue handkerchiefs, which were used as bibs and blind folds.

The ball game was a wonder. It would have put big leaguers to shame. What the score was, I don't know, but I do know somebody won. It was hard telling on which side the players were, in fact I believe most of them didn't know themselves, but anyway, they played ball and played it like professionals.

Three bag hits were as common as strikes, and wonder of wonders there was no fighting about decisions—maybe because Frank Ederle didn't umpire as he did at Coldwater Lake.

All the old standbys were there. You will recognize them all on the group photograph—almost a hundred in all, and never did time pass more quickly. The Michigan folks always do things up right, and incidentally Gil Moore who is chairman of the entertainment committee for the annual convention next winter, says that his committee have some wonderful plans made. Well, the convention will be in Grand Rapids—nuf'sed.

The useful and splendid prizes for the different contests were donated by W. C. Hopson Company, George L. Lehnen, Timmer and Tepper Hardware Company, the United States Register Company, Morley Bros. Hardware Company, the State Association and Gus Ederle personally.

All of us who were fortunate enough to spend the day with the Grand Rapids folks were mighty glad we did; we thank our hosts and hope that they will remember us again next year.



Several Decisive Moments in the Big League-Defying Ball Game

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

It is surprising how resourcefulness can be made to get one out of difficulties. The other day H. W. Armbruster of Wheeling Corrugating Company had occasion to prove to himself that he is unusually gifted with resourcefulness.

He took the receiver of his telephone down and discovered that there were others ahead of him.

"I just put on a pan of beans for dinner," he heard one woman complacently informing another.

H. W. is a gentleman if anything and he obediently hung up the receiver and waited. Three times he waited and then, exasperated, he broke into the conversation. "Madam, I smell your beans burning," he announced crisply. A horrified scream greeted the remark, and Mr. Armbruster was able to get his number.

* * *

Julius Fleischmann of the Lincoln Sheet Metal Works, 5510 North Western Avenue, Chicago, told me about a certain Italian whose happy illusions about the rattlesnakes of this country were suddenly shattered.

It all happened this way. Trustful Tony, working with a construction gang in Wyoming, was sitting on a log eating his lunch, when he spied a rattlesnake close by. He had been told that a "rattler" never strikes without giving a warning rattle, so he made no effort to move. This rattler, however, didn't run true to form, or was irritated by the strong odor of garlic. Anyhow, he made a lunge for Tony's leg, failing entirely to furnish any previous notice. Tony, who just managed to swing his leg to the safe side of the log, was righteously indignant, and shaking his fist in the general direction of the now fast disappearing reptile, he howled: "Dama you! Why you no ringa da bell?"

A furious man rushed into a newspaper office. He was a local celebrity and had been reported as present at a boxing match.

"You referred to me as the 'well-known lightweight champion,'" he roared.

"Well—," said the editor.

"And I'm not. That's my brother. I'm the coal merchant."

* * *

I don't like to tell this one on T. R. Mackin, Chicago branch of the International Heater Company, altho it happened long before he met the Mrs. Mackin, but anyway the hush of twilight had fallen upon all things, including T. R. and the beautiful creature he was embracing by the garden gate.

At last the B. C. spoke, saying: "Won't you come into the parlor, Mr. Mackin, before you go?"

"N—no, I think not," replied Mackin, hesitatingly.

"I wish you would," pressed the young lady. "It's awful lonely! Mother has gone out and father is upstairs growling with rheumatism in the legs."

"Poor man! Both legs?" asked Mackin, solicitously.

"Yes, both," replied the old man's daughter.

"Well," decided Mackin, "do you know, perhaps I will come in for a few minutes."

* * *

Miss Helen Roland, daughter of Mr. and Mrs. Charles Roland of Roland & Beach, Richmond, Indiana, stepped into a drug store in Richmond recently and asked if the drug clerk could fix her up a dose of head ache powders so that the powders could not be tasted. "Certainly," said the clerk, "won't you have a glass of soda water while waiting?"

Miss Roland drank the soda-water, whereupon the clerk inquired if there were anything else. "No," re-

plied the young lady, "just the powders." "But you have just drunk them, Miss," replied the clerk.

"Oh, but they were for my mother," said she.

* * *

These certainly are wild days. At least that's what A. A. Glessner, of Hart & Cooley Company, thinks. He was in New York some time ago and while there he met a young lady whom he liked very much. While en route via the subway to see her one day he met another girl with bobbed hair, natty openwork stockings and everything. Mr. Glessner forgot about going to his original destination, but spent the evening in Greenwich Village instead. In going home in the taxi later Mr. Glessner noticed that his companion was instructing the driver to take them to the same address to which he himself had been bound earlier in the evening.

When they arrived at home of the fair companion, Mr. Glessner was in a quandary. His surprise and curiosity was aroused to a still higher degree when he saw the girl who he had started out to see standing on the porch.

Just then the young lady on the porch cried, "Mother, so you were out with him, were you?"

* * *

Of all kinds of humor, the pun is the coarsest, I am told by critics whose brows are high. Nevertheless, I submit this assemblage of puns. Older and worse jokes than these may be heard in vaudeville.

"What is the secret of success?" asked the Sphinx.

"Push," said the Button.

"Never be led," said the Pencil.

"Take pains," said the Window.

"Always keep cool," said the Ice.

"Be up-to-date," said the Calendar.

"Never lose your head," said the Barrel.

"Make light of everything," said the Fire.

"Do a driving business," said the Hammer.

"Aspire to greater things," said the Nutmeg.

The Editor's Page

Forming Closer Contact Between Architects and Contractors

SHEET metal contractors should be concerned about their duty of devising ways and means of effecting a closer contact with architects than now exists.

One of the most frequent causes for the failure of people in the key positions of the building industry, such as that of architects, to take proper notice of the merits of certain building materials is to be found in the negligence of the purveyors of those materials to call favorable attention to their wares.

The architect is a human being. He is subject to prejudice and he is capable of being influenced by logic and superior persuasive power. It is very fortunate that such is the case, for if it were not, the cause of the sheet metal contractor would be very near hopeless.

In going about his task of bringing sheet metal more forcibly to the attention of the architect, the sheet metal contractor must take these things into consideration: In the first place the architect has been trained for his work in a university. He has had drilled into him day after day for four or six years subjects in which sheet metal has played a very small part. Naturally at the very outset he is going to be prejudiced against something which he knows very little about. He reasons that if sheet metal had any superior merit, why was it not brought to his attention while he was in school? Added to this are the examples of sheet metal work that have come under his own observation. They have been anything but encouraging.

From this it is seen that before the sheet metal contractor can get anywhere at all, he must change the attitude and viewpoint of the architect. He must re-educate him to the fact that sheet metal materials have superior merit. He must acquaint the architect with the new standards that are being set up at the productive end of the industry. He must prove that these standards when once attained will be guarded with military exactness and precision.

All this work the sheet metal contractor can do if he will set his mind and heart to the task. He is being very greatly assisted in this activity by the Trade Development Committee of the National Association of Sheet Metal Contractors. The Cornice Booklet which the association has already turned out was the opening wedge. The success which the delivery and acceptance of this Cornice Booklet met with is highly encouraging; it proves beyond a shadow of a doubt that the architect can be reached; that he can be won over to the specifying of sheet metal cornices; that he can be made to appreciate the permanence and beauty of a sheet metal roof.

The Sheet Metal Specification book which the association is now about ready to send to the printers will

still further aid the individual contractor in his all-important work.

There is no reason to doubt the efficacy of this method of attacking the problem to produce results. This sort of missionary work must always precede a swing toward accepting any new material—for the sheet metal of today is a new material.

The stone people were fortunate in that the examples used in architectural schools for instruction have been drawn almost exclusively from the old world, where stone is the predominating material.

As soon as the attention of the powers that be is called to the fact that they are overlooking a good material in sheet metal, they are going to take more notice of it; they are going to give it more than the kick-and-promise look. Before long they are going to respect sheet metal as they do their best friend, because the sheet metal industry as a whole is going to make them respect—not because they want to themselves out of pure benevolence of spirit.

If the contractor, when faced with these problems, will aim to formulate a plan of corrective action only after he has got at the seat of the trouble and knows why his material has come into disfavor or why it is not specified, he is bound to win the respect of the man he is trying to influence in his favor.

A closer contact must be established between sheet metal contractors and architects. The National Association of Sheet Metal Contractors is doing all in its power to bring about this closer contact. Other interested agencies, too, are doing their utmost in this work. The contractor must do his share. He is on the ground—the scene of action, as it were—and has the advantage of personal contact. If he knows of some way in which the national association could still further aid the movement, which it is not now using, it is his duty to call attention to it. The fact that he is on the ground may give him an insight into the problem which is not to be had at long range. Air your views, whether to criticize or to praise.

Code Pledge Card Signers in Clover

THE National Warm Air Heating & Ventilating Association will soon be carrying the story of warm air heat to the public direct.

Those warm air furnace installers who were farsighted enough to sign the Code pledge card will soon be sitting in clover. The inquiries which the national advertising will produce will be parceled out to these installers.

If you have not already done so, it will be a wise move on your part to sign the Code pledge card as soon as possible. Watch the warm air heating industry grow.

Wisconsin Sheet Metal Contractors' Picnic at Knepel's Grove, Mequon, Wisconsin, August 25

Fine Weather, Large Crowd and Good Spirits Mixed Well for Great Time

By J. F. JOHNSON

The boys in the Sheet Metal and Warm Air Heating business in Wisconsin feel the call of the north woods every year about this time and they manage somehow to get together for a good time beneath the trees.

The Milwaukee men worked up the outing and appointed Henry Pluckhann, Ralph Gehring and Charlie Wamser on the entertainment committee.

The committee worked hard and invited the whole state to come and upwards of one hundred registered for the day.

The auxiliary boys were there in force, too, and the morning was not very old before everyone was on excellent speaking terms with one another.

Practicing for the ball game and the horseshoe pitching contests occupied the morning, with an occasional visit to the refreshment stand.

At noon, Henry Pluckhann and his assistants gave the dinner signal and oh, boy, the sauer-braten and all the trimmings sure were enjoyed.

"Milcor" and "GiltEdge" and other brands of cigars were passed around and no one had a thought for the sheet metal business. Now it was time for the ball game to get going, so the two following teams were organized.

Travelers

Catcher.....Bob Meyer
Pitcher.....A. G. Pomrening
Right field.....H. L. Jackson
Center field.....J. Oelstrom
Left field.....H. Jueds
Second base.....W. Otten
Third base.....R. Frank
First base.....H. Meyer
Shortstop.....H. Schlifske

Contractors

Catcher.....Geo. Jordon
Second base.....Glen Holford

First base.....Chas. Goll
Pitcher.....John Osmanski
Right field.....Otto Melcher
Third base..H. R. Eschenburg
Shortstop.....O. Eaulson
Left field.....E. Winkler
Center field.....O. V. Nelson
Umpire—John B. Pfiffner.

The game was hot from start to finish. Home runs were frequent, base on balls, hit by pitched ball, sliding for home and all the other exciting moments took place and Umpire John B. Pfiffner was a busy man. The fact that he was not criticized for unfair decisions goes to show how well he accomplished a most difficult job.

The travelers fought the best they knew how but they could not play up to the game the contractors put

up and finally fell to defeat, losing by a score of 21 to 20.

While the ball game progressed amid yells, some of the other boys took to playing horseshoes. H. Wherry, Joe Anderson, Joe and Frank Hollitz, Dave Green, Bill Hammann, Harry Christman and others were found busy tossing shoes at the stakes.

Quite a few quarters exchanged hands here and Dave Green and Joe Anderson took most of them. Joe Anderson still remains the champion of the finger pullers. He had only a few opponents this year and nobody took his money.

A picnic is never complete without a wrestling match, so Louis Echenburg and Bill Hammann put on a bout. Louis lost by rolling down a slope in the field.

A card game was under way also at this time and Jack Millen, Louis Eschenburg and some of the other boys had a nice quiet game. All the time the refreshment stand, of course, was doing a big business.

H. Meyer helped Henry Pluckhann behind the bar when the ball



Crowd watching the ball game—Left field: 1.—The Bleachers. 2.—Ben Huisman watching Louis Eschenburg, Jack Millen and others playing cards. 3.—The popular soft drink bar. 4.—Joe Anderson winning at his favorite finger pulling game from Frank Hollitz. 5.—The losing salesmen's ball team. 6.—The contractors who outhit and outran the losing team.

game was over, as business got better than ever.

Along about dusk Louis Eschenburg started to yearn for the aroma of sizzling blut wurst sausages, so he was appointed chief of the sausage sizzlers, and Louis is an expert indeed.

With a sausage, a bun and a glass of amber fluid the boys topped off

a most pleasant picnic day. They sat around and talked between bites. Soon, however, it was dark and one by one the autos left for home with another good time chalked up for the Milwaukee boys.

Substitution

We wish to correct the contractors' line-up for the Contractors'-

Salesmen's ball game at the Cook County Sheet Metal Contractors' Picnic. Carl Bothfeld of 1742 West North Avenue was playing first base instead of Louis Bothfeld.

Harry C. Barrager Killed in Automobile Accident

Harry C. Barrager of the Meyer Furnace and Supply Company of Milwaukee, Wisconsin, met his untimely death while driving north of Marshfield on August 18th.

Mr. Barrager was connected with The Meyer Furnace Company of Peoria for four years prior to coming to the Milwaukee branch, which was opened in July of 1922. He sold to the trade in Milwaukee and surrounding territory and was widely known for both his salesmanship and fine character.

He leaves a host of friends among contractors and fellow salesmen who will miss his happy smile.

Mr. Barrager was just thirty-nine years old. He is survived by a wife and daughter.



National Hardware Association convention, Atlantic City, New Jersey, October 19, 20, 21, 22; headquarters, Ambassador Hotel; Charles F. Rockwell, 342 Madison Avenue, New York, secretary-treasurer.

American Hardware Manufacturers Association convention, Atlantic City, New Jersey, October 19, 20, 21, 22, 1926; headquarters, Ambassador Hotel; Charles F. Rockwell, 342 Madison Avenue, New York, secretary-treasurer.

Illinois Retail Hardware Association convention and exhibit, Hotel Sherman, Chicago, February 15, 16, 17, 1927. Leon D. Nish, 14 North Spring Street, Elgin, Illinois, secretary.

Michigan Sheet Metal and Roofing Contractors' Association, Pantlind Hotel, Grand Rapids, March 1, 2 and 3, 1927. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids.

New England Hardware Dealers' Convention and Exhibition, Mechanics' Building, Boston, Massachusetts, February 22, 23 and 24, 1927. George A. Fiel, Secretary, 80 Federal Street, Boston.

National Association of Sheet Metal Contractors, Adolphus Hotel, Dallas, Texas, April 19, 20, 21 and 22, 1927. Edwin L. Seabrook, Secretary, 600 Chestnut Street, Philadelphia.



1.—H. L. Jackson watching the ball sail over his head after fouling. 2.—Henry Pluckhann, Ralph Gehring and Chas. J. Wamser, the hard working entertainment committee. 3.—J. H. "Harry" Christman pitching horse-shoes. 4.—"Pom" Pomrening knocking out a home run.

Cincinnati Successful in Getting "Smoke" Ordinance Passed

Precepts of Standard Furnace Code Embodied in the Ordinance

THE following is that part of the recently passed Cincinnati Smoke Ordinance which refers to the installation of warm air furnaces:

Section 311-24. No person, firm, association, corporation, or employee thereof, shall install, change, make any addition to, alter or remove, any chimney, chimney stack, power boiler, power boiler furnace, heating boiler, heating boiler furnace, warm air furnace, oil burner, automatic mechanical stoker, or hand operated stoker; or alter, modify or change the method of supplying the draft in any furnace, without first making proper application to the Commissioner of Buildings on forms furnished by the City, and whenever considered necessary by the Commissioner, submitting proper plans and specifications in triplicate, with said application, and receiving proper permit from said Commissioner to perform such work.

No such permit shall be issued by said Commissioner, unless the work to be done is in accordance with the ordinances and laws pertaining thereto, nor until the Commissioner of Buildings is satisfied that the work will be done in such manner as not to create undue fire hazard, or become unsafe in any respect. This section shall not be interpreted to apply to railroad locomotives.

Section 311-25. Where internally fired steam or hot water boilers or warm air heaters are installed for heating, the furnace of said boilers or heaters shall be provided with down draft, underfeed, or other type of smokeless equipment approved by the Commissioner of Buildings; except where the boiler used is of less capacity than two thousand (2,000) square feet of steam radiation, or of less capacity than three thousand two hundred (3,200) square feet of hot water radiation, manufacturers' catalogue rating, or except where in warm air heater installations the total amount of grate surface in all heaters combined is less than (9) square feet.

No heater shall be approved as smokeless which shall cause smoke of a greater degree of density than No. 1 scale, as designated in Section 309, when coal of 40 per cent volatile content is burned therein.

A list of approved smokeless heating boilers and warm air heaters shall be kept in the office of the Commissioner of Buildings for public inspection and reference.

Section 311-26. A repair of a chimney, stack, furnace, or any of the other devices named in Section 311-24 of the Code of Ordinances may be made by or under the direction of the engineer in charge of any plant, without first having obtained a permit so to do as provided in Section 311-24 of the Code of Ordinances. A repair as used in this section shall be construed to mean the identical restoration or identical renewal of an

existing part or parts of a furnace or other devices referred to herein, which part or parts have become inoperative as a result of use, or age.

Section 311-27. Sections 311-1, 311-2, 311-3, 311-4, 311-5, 311-6, 311-7, 311-8, 311-9, 311-10, 311-11, 311-12, 311-13, 311-14, 311-15, 311-16, 311-17, 311-18, 311-19, 311-20, 311-21, 311-22, 311-23, 311-24, 311-25, 311-26, 311-27, 311-28, 311-29 and 311-30 shall relate and apply to all construction hereafter erected, and to all existing construction hereafter reconstructed or remodeled, when in the opinion of the Commissioner of Buildings and the Chief Inspector of Mechanical Equipment and Smoke Emission, the application of said sections shall be practical, and when such reconstruction or remodeling shall require a permit.

Section 311-28. All chimneys forming part of a building construction, excepting chimneys for high pressure boilers

ing flue will not cause any additional smoke or create a fire hazard.

The Commissioner of Buildings shall have authority to require a larger chimney than the one called for in above table, if the manufacturer will not guarantee his boiler or boilers to operate efficiently with size of chimney listed.

Section 311-29. All contractors having unfinished jobs on the effective date of this ordinance, for which purpose contracts were let prior to said date, shall furnish the Commissioner of Buildings a list of such unfinished jobs, together with the serial numbers of building permits issued for the building in which the installation is unfinished.

Section 311-29 (a). A list of approved warm air furnaces classified as to capacity rating, shall be kept in the office of the Commissioner of Buildings for public inspection and reference. In all cases where warm air furnaces and the appurtenances thereto are to be installed

		Number of Heaters Attached to Flue										
Boiler Capacity		1		2		3		4				
Warm air furnace capacity in in leader pipe, sq. in.	Hot water rating, sq. ft.	Steam rating, sq. ft.	Dimensions and height in ins. and ft.		Heaters cross-connected, forming a battery and attached to one flue opening.							
			Area Height									
			ins.	ft.	ins.	ft.	ins.	ft.	ins.	ft.	ins.	ft.
To 450	to 700	to 450	8x12	35	Dimen- sions, Ht.,	Dimen- sions, Ht.,	Dimen- sions, Ht.,	Dimen- sions, Ht.,	Dimen- sions, Ht.,	Dimen- sions, Ht.,	Dimen- sions, Ht.,	
800	900	600	8x12	35								
	1,100	700	8x12	40	ins.	ft.	ins.	ft.	ins.	ft.	ins.	ft.
1,000	1,500	1,000	12x12	35	12x16	50	16x20	50	20x20	55	24x20	60
	2,500	1,500	12x16	40	16x20	50	20x24	55	24x24	60	28x28	65
	4,000	2,500	16x16	40	20x24	55	24x28	60	28x28	65	30x30	70
	5,800	3,600	16x20	50	24x24	60	28x32	65	30x30	70	30x36	80
	7,300	4,500	20x20	50	24x28	65	30x30	70	30x36	80	36x36	90
	8,700	5,400	20x20	55	28x28	70	30x32	80	30x36	90	42x42	100
	10,000	6,400	20x24	60	30x30	75	32x32	85	36x36	90	42x48	100
	12,000	7,400	24x24	65	32x32	75	30x36	85	36x42	100		
	14,000	8,400	24x28	70	30x36	80	36x36	90	42x42	100		
	15,000	9,400	28x28	70	30x36	80	36x42	90	42x48	100		
	17,000	10,400	28x32	80	36x36	80	42x42	90	48x48	100		
	19,000	11,400	30x30	80	36x36	80	42x42	90	48x48	100		

or for furnaces used in manufacturing, where high temperatures are maintained, shall be subject to the following:

Flue areas and heights must not be less than those given in the following table, except in the case of one-story residence buildings, in which a minimum flue height of 26 feet above the boiler or furnace grate level shall be allowed.

Minimum Chimney Flue Sizes and Heights for Furnaces and Low Pressure Steam and Hot Water Boilers

Area dimensions as tabulated in this section refer to the clear void space between the masonry walls of the chimney, inside of which the flue lining may be set.

Heights given are above grate level.

The Commissioner of Buildings may permit any new furnace to be attached to an existing flue of smaller area or lesser height than given in this table, whenever in his opinion and judgment such exist-

ing flue will not cause any additional smoke or create a fire hazard.

Basement Pipes

(1) First Floor Rooms.

Divide square feet of window and outside door openings by twelve (12).

Divide square feet of net exposed wall by sixty (60).

Divide contents in cubic feet by eight hundred (800).

Add the three quotients and multiply the sum by nine (9).

The result will be the required area of the basement pipe in square inches.

(2) Second Floor Rooms.

Divide square feet of window and outside door openings by twelve (12).

Divide square feet of net exposed wall by sixty (60).

Divide contents in cubic feet by eight hundred (800).

Add the three quotients and multiply the sum by six (6).

The result will be the required area of the basement pipe in square inches.

(3) **Third Floor Rooms.**

Divide square feet of window and outside door openings by twelve (12).

Divide square feet of net exposed wall by sixty (60).

Divide contents in cubic feet by eight hundred (800).

Add the three quotients and multiply the sum by five (5).

The result will be the required area of the basement pipe in square inches.

Size of Wall Stacks

(4) **First Floor Rooms.**

Calculations to be made as in Paragraph 1.

(5) **Second Floor Rooms.**

Deduct 30 per cent from basement pipe area as determined in Paragraph 2.

(6) **Third Floor Rooms.**

Deduct 30 per cent from basement pipe area, as determined in Paragraph 3.

Each second floor room and each third floor room shall be heated by separate wall stacks.

Transitions—Fittings and Stacks

(7) Transitions from warm air pipes to stacks shall be made with a well designed elbow or boot, and no stack shall have an ear less than seventy per cent of the warm air pipe area.

Size of Registers

(8) All registers shall have a free area at least equal to the calculated area of the basement pipe, transition fitting or stack to which they are connected.

Size of Furnace

(9) To determine the size of furnace required to serve a warm air heating system, add together the respective warm air pipe areas in square inches, as determined in Paragraphs 1, 2 and 3 herein. The furnace used shall have a minimum capacity in square inches not less than the sum thus obtained.

Every person, firm or corporation installing furnaces in the City of Cincinnati, shall file with the Commissioner of Buildings a list of furnaces, or types of furnaces, which it is prepared to install; giving numbers, diameter of casings, diameter of fire pots at the top, diameter of grates, height of castings, height of furnace cased with standard cap to receive twelve inch (12") warm air pipe and the capacity in square inches of piping which each will carry.

The installation of any such furnace or type of furnace shall be subject to the approval of the Commissioner of Buildings.

Location of Furnace

(10) The location of the furnace shall equalize the length of warm air runs as far as possible, yet give necessary preferences to pipes supply living rooms, dining rooms and main halls.

Foundation

(11) Furnaces must be provided with foundations of brick, cement, or other incombustible material, which foundations shall be level and shall extend at least fifteen inches (15") at the rear and sides of the furnace casing and thirty-six inches (36") in front.

Setting or Assembling of Furnace

(12) The base ring of the furnace shall be cemented to the foundation, making an airtight joint. The furnace parts shall be assembled plumb and level and in a workmanlike manner. All sections and joints shall be properly fitted. Joints requiring cement shall be well filled and all bolts shall be drawn up tight.

Casings

(13) Warm air furnaces shall be enclosed in metal casings or walls of brick.

Portable sheet metal casings, including casing tops, shall be made of galvanized sheets, not lighter than No. 26 U. S. standard gauge. They shall fit the casting and casing rings closely so as to be dust-tight and shall be securely fastened to the front. The casing shall be lined from the upper casing ring down to the line on a level with the grate.

When side collars are used, the casing top must be of sufficient height so that the largest warm air pipes can be taken from side without ovaling. In no case shall a distance less than eight inches (8") be maintained between the top of any furnace and the top of casing or bonnet.

(14) Where the joists or ceiling above a furnace are of combustible material, there shall be a space of at least twelve inches (12") between the casing top of the furnace and such joists or ceiling, if the same are protected by incombustible covering, and a space of at least eighteen inches (18"), if the same are not so protected. Where the protection consists of an incombustible shield, the same shall be suspended at least two inches (2") from the combustible joists or ceiling, and shall extend twenty-four inches (24") beyond the outer edge of the furnace.

Openings for side casing collars shall be cut into the casing top so that the tops of all openings shall be on a level.

Casing collars shall be fitted into place with a proper flange or bead on the outside and drawn up on the inside, making a dust-tight joint. All collars shall be of the same size as the warm air pipes to which they are to be connected.

(15) All warm air pipes shall be made of bright tin not lighter than 1C or No. 28 gauge galvanized iron. Side seams shall be locked seams. All joints shall be either double seams or lapped not less than one and one-quarter inches (1 1/4"). All pipes shall be properly secured to ceiling or joist. Any pipe fourteen inches (14") or greater in diameter shall be made of material not lighter than 1X or No. 26 standard gauge galvanized iron. No basement warm air pipe shall be less than eight inches (8") in diameter.

Warm air pipes shall not be permitted to run within one inch (1") of any woodwork, except at distances of more than four feet (4') from furnace, and at such distances only where the woodwork is covered with asbestos paper and the asbestos paper is covered with tin or iron.

Where warm air pipes pass through a masonry wall, a metal thimble shall be provided, having a diameter at least one inch (1") greater than the pipe, with the pipe supported in such a manner that the air space is uniform on all sides.

Wall Stacks

(16) All wall stacks or wall pipes, heads, boots, ells, tees, angles and other connections shall be made of bright tin or galvanized iron, and shall be covered with not less than one thickness of ten pounds per one hundred square feet of asbestos paper. An air space of not less than three-eighths of an inch (3/8") should be allowed on the two sides nearest the vertical studs. All such pipes shall be braced in a proper manner so as not to obstruct the flow of the air throughout. All joints shall be locked and held in place by means of lugs or straps.

All pipes and fittings must be secured firmly in place by lugs or straps attached to the outer walls of stacks and fittings, and no nail shall be driven through these stacks or fittings at any point. No wall pipes or fittings shall be used which depend on soldered joints. The various members shall be so made that all joints are locked and the several members shall be attached to each other with slip joints, which are for the purpose intended airtight. No wall stack shall be less than three and one-half inches by ten inches (3 1/2"x10") in size.

Registers

(17) When baseboard or wall registers are used they shall be properly and permanently attached to the stack head in such manner as to prevent any leakage of air between the head and the register.

Registers for warm air and warm air pipes shall not be located in outside walls. The warm air registers in the various rooms shall be located in or near the inside walls in all cases.

Air Supply to Furnace

(18) The air supply to furnace for warm air heating plants may be taken from outside or from within the building, or may be taken partially from outside and partially from within. In no case, however, shall air be supplied to any furnace from any basement or furnace room.

The cold air intake or return where air is taken from within the building shall have a net area throughout its entire length not less than ten per cent (10%) in excess of the combined net area of all warm air pipes leading from the furnace. This may be maintained in one or more ducts.

When the cold air supply is taken wholly from the outside of the building, the supply duct at its most contracted area, must equal or exceed eighty per cent (80%) of the combined area of all warm air pipes leading from the furnace.

Cold air ducts shall be constructed of metal, tile or other incombustible material having smooth inner surface, shall maintain a constant net area throughout their entire length and shall be made tight. Where a boot or shoe is connected to the casing at the base, the opening shall not extend higher than a line on the level of the grate of the furnace. The width of the shoe shall be of proper measurement to make the area at least equal to that of the round or square pipe to which it is connected.

Wherever the space between the joists is used to convey cold air overhead, the space between such joists shall be enclosed with galvanized iron. In no case shall a cold air duct be run directly over a warm air furnace, unless the system is a forced draft system. The connection from the span to the boot or shoe shall be made of galvanized iron not lighter than No. 26 U. S. standard gauge.

The cold air face or faces shall be made of wood or metal. Where cold air face is placed in a seat or side wall (whether furnished by owner, general contractor, or furnace contractor) the open work of the face must extend to within at least one inch (1") of the floor line.

The free area of cold air faces shall be at least ten per cent (10%) in excess of the free area of the duct or ducts to which they are connected.

No vertical cold air face shall be con-

sidered effective more than twelve inches (12") above the finished floor line.

Smoke Pipe

(19) The smoke pipe shall be as short and direct as is consistent with the location of the furnace. It shall be made of either black or galvanized iron not lighter than No. 24 U. S. standard gauge, and of the full size of the collar on the furnace throughout its entire length. It must have no other opening for attaching any fire-place, stove, range, water heater, gas or ventilating connections; provided, however, that where an auxiliary gas burning furnace is used, the smoke pipe from the gas burning furnace when blast gates are installed in both pipes. All smoke pipes shall be locked, seamed or riveted, and all joints shall lap not less than one and one-half inches (1½") and pipes shall be rigidly secured.

Where the smoke pipe enters the flue, a thimble shall be cemented into the flue and the connection thereto made tight. Should any smoke pipe come within eighteen inches (18") of any combustible material, such combustible material must be covered with asbestos paper and a metal shield so fastened that a two inch (2") air space shall exist between this shield and combustible material. This shield shall be no less in size than twice the diameter of the smoke pipe and of sufficient length to cover the wood at all points.

No smoke pipe shall project through any external wall or window. No furnace connections shall be made to the flue without proper cleanout facilities having first been provided in the bases of the flue.

Pipeless or One Piece Furnaces

(20) When but one duplex grating is used for both warm and cold air in a so-called pipeless furnace, the area of the cold air intake shall be at least equal to the face area of the warm air outlet of the grating. The requirements of Paragraph 13 of this section as to casings shall not apply to pipeless furnaces, but such furnaces shall be governed by the following specifications:

The inner and outer casings shall be of either black or galvanized iron not lighter than No. 26 U. S. standard gauge.

A uniform air space shall be maintained at all points between the inner and outer casings. In no case shall the top of the furnace be allowed to come closer than twelve inches (12") to any ceiling or joist above the furnace.

Where joists are cut to accommodate this type of furnace, headers shall be put in and braced so as not to weaken the structure.

Paragraphs 1 to 6 of this section dealing with basement pipes and wall stacks, shall not apply to pipeless furnaces.

Where one warm air register face is used and a separate face or faces for cold air supply are used, all sections of this ordinance shall apply as if a pipe furnace were installed.

(21) It shall be the duty of the Commissioner of Buildings to inspect or cause to be inspected all warm air furnaces and the appurtenances thereto hereafter installed or constructed.

(22) When the work of installation has proceeded to the point where the stacks to the upper floors and heads for all side wall registers have been installed, and boots have been connected,

the contractor shall notify the Commissioner of Buildings. If the work done complies in all respects with the terms of this ordinance, the said Commissioner of Buildings, or his representative shall affix a certificate to that effect to each stack or register head.

(23) Inspection of repair or renewal work shall be made in each case as the nature of the work shall require.

(24) Final inspection of new and old jobs, including replacements, shall be made after the whole is connected up and ready to operate, and before any fire has been started.

(25) The contractor shall furnish the owner with a certificate of approval from the Commissioner of Buildings, after the final inspection has been made and the work found satisfactory.

(26) It shall be unlawful for any person or lath over, plaster or cover up any warm air heating work before such work has been inspected and the certificates herein provided for have been attached.

The Commissioner of Buildings shall have the right and authority to remove or order removed all lath, plaster, or other covering which may have been placed over any work before the same has been inspected.

Sec. 311-30. The fees for permits herein prescribed shall in each instance be paid before the permit is issued, and

shall be credited to the Public Safety Fund, which fees shall be as follows:

Warm Air Heating Furnaces and Steam or Hot Water Heating Boilers

New installations in buildings of 25,000 cubic feet content, or less, each such heating unit.....	\$2.50
New installations in buildings of more than 25,000 and less than 50,000 cubic feet content, each such heating unit.....	4.00
New installations in buildings of 50,000 cubic feet content or more, each such heating unit.....	5.00
Replacements, warm air furnaces and heating boilers, each.....	2.00
Any heating furnace or boiler, when added as an alternative auxiliary to an existing heating system....	2.00
Installation of oil burners in dwellings, for each such heating unit..	1.00
Installation of gas burners in dwellings, for each such heating unit..	1.00
"Replacement," as used in this section, shall mean the installation of a warm air furnace to replace another warm air furnace of the same capacity, or the installation of a heating boiler to replace another heating boiler of the same capacity. When the new furnace or boiler is of greater capacity, the fee shall be the same as in the case of a new installation.	

Fuller Hardware Works Up Big Fishing Tackle Trade

Fishing Contest Makes Store Headquarters for Information on Best Fishing Places

TEN YEARS ago, at a suggestion from a salesman, we started our fishing contest by offering one prize for the largest bass caught during the month of August. We got out a small circular announcement, distributed it among the several resorts, and also announcements were made in the local paper, says E. V. Fuller, Fuller's Hardware, Park Rapids, Minnesota, writing in Hardware Trade.

We had several nice bass entries and it aroused considerable interest and found much favor with the summer resorts so that the following year a few more prizes were added, taking in a few more varieties of fish to be found here. This has increased each year until the present year we are offering 24 prizes covering nearly every variety of fishing to be found in this vicinity. The list of entries has increased each year from a few entries in the beginning up to 253 in 1925. It has grown so that the result sheet has grown from a typewritten sheet to

a display card and now has to be put out in folder form.

Fishermen Get Information

There are several reasons for the success of this fishing contest. One of them is the location of our store, being in one of Minnesota's best fishing districts with the largest variety of fishing to be found in any one section of the state. The next big reason is the large number of resorts who are willing to cooperate to put this across. The third main reason is that it has grown to be a community advertisement as well as an advertisement for Fuller's Hardware.

Conducting the fishing contest enables us to give first-hand information on the fishing conditions, also gives us something in black and white, something more definite than just hearsay when we answer an inquiry on fishing.

At the end of the season when we get out our result sheet it shows the date, the weight, the lake, home ad-

fish displayed in it. They are well taken care of so that they are returned to their owners in perfect condition.

Conducting a fishing contest is a lot of work and quite expensive and I doubt if we would be able to keep it up or make a success of it if it were not for the coöperation of the summer resorts donating the prizes and encouraging their guests to bring in their big ones and otherwise showing their good-will in boosting this fishing contest. I doubt very much if our contest would be the success it has been if it were not for the ideal location of

the Mantrap-Valley Itasca Park Region where we have such a variety of fishing and can show the fisherman some variety of good fishing at any time.

As it is now being conducted, the fishing contest almost pays its own way. Retail sales of the rods to the resorts which are offered for prizes leave margin enough to pay for the printing of the announcement sheet and the ice used for the window display. The result sheet is financed by selling advertising space to the resorts and local merchants to cover the cost of the printing and distribution of the sheet.

Steel Record for June, July and August Is Unequalled

Pig Iron Sales Steady—Little Change in Nonferrous Prices

AUGUST bookings and production have served to round out a sustained record of heavy business for the summer period that is without parallel in the steel industry. During the past three months the mills have entered, produced and shipped, it is estimated, well over 1,000,000 tons more than during the corresponding period in 1925 when the high yearly output of steel was established.

Activities of the past three months have averaged approximately 80 per cent of capacity. This is at a rate fully 5,000,000 to 6,000,000 tons per annum ahead of that shown in the June-August period last year when production averaged slightly over 70 per cent.

New requirements of miscellaneous character are large and steady and the situation is yet to develop trustworthy evidence pointing to a permanent sagging in recent consumption.

Pig Iron

Inactivity in the pig iron market is more pronounced. None of the three outstanding inquiries of a week ago has been closed, and no new inquiries are out. Most sellers still are quoting \$18, base, valley. The report of \$17, base, valley, having been offered a week ago ap-

parently resulted from a melter taking a quotation received from a Shenango valley producer and figuring it back to Youngstown.

The market continues quotable at \$17.50 to \$18, base, valley.

At Chicago despite light buying, the price of northern No. 2 and malleable pig iron still seems to be firm at \$21, Chicago furnace.

The price of \$21.50 apparently has disappeared from the spot transactions, practically all tonnages moving at \$21.

Inquiries and other indications point to a heavy demand for foundry iron for the last quarter at Birmingham.

Sales during past week continued in small lots and the aggregate was less than the make. Furnaces continue to quote \$21, base.

Copper

Some producers have been willing the past day or two to sell below the 14.50 cent Connecticut level after holding out for that figure, while a few large interests continued to hold firmly at that figure.

A little went as low as 14.37½ cents delivered, but generally producers would not meet that figure.

Little metal has been available for domestic consumers in the outside market.

Zinc

As smelters have not been carrying large stocks at any time, activity was easily reflected in firmness, and prime western crossed 7.45 cents East St. Louis.

Some buying was for prompt shipment and some for September; while a little interest was shown in October shipments, some smelters did not care to sell for this month.

Lead

Though there is no change in the American Smelting & Refining Company's price of 8.90 cents New York, there is a somewhat easier tone to the market in general, and the principal factor in the middle west, heretofore asking 8.75 cents St. Louis basis, has lowered his price to 8.70 cents for September shipment.

Tin

Prompt and August delivery again was shown to be in very small supply, with no sellers at under 65.12½ cents, or ½ cent lower than asked at the close yesterday, while in September delivery on efforts to buy the market was bid up from 64.50 cents to 64.70 cents without apparently finding sellers, although yesterday there were sellers at 64.87½ cents and no buyers at 64.75 cents.

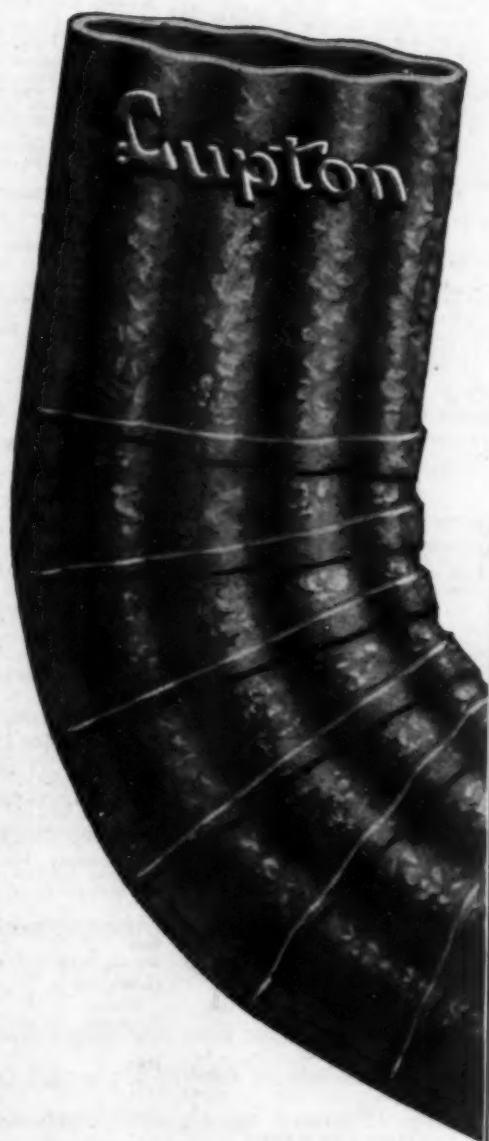
October delivery has been quiet at 64.12½ cents bid, 64.37½ cents asked, and November at 64.00 cents to 64.12½ cents.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.50 to \$18.00; old iron axles, \$24.00 to \$24.50; steel springs, \$18.50 to \$19.00; No. 1 wrought iron, \$13.00 to \$13.50; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 5 cents, and cast aluminum, 19 cents.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$41.50; commercial 45-55, \$38.50, and plumbers', \$37.50, all per 100 pounds.



a guarantee

Among sheet metal men, the name "Lupton" on an elbow has meant quality for many years. Lupton Elbows have always met the most exacting requirements.

As a guarantee of perfect and uniform fit, good heavy materials, and clean galvanizing, be sure you find that name "Lupton" on the next elbows you use.

Specify them to your jobber

DAVID LUPTON'S SONS CO.

ALLEGHENY AVE. & TULIP ST., PHILADELPHIA

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON

Chicago Foundry.....	\$21 00
Southern Fdy., No. 2.....	27 01
Lake Superior Charcoal.....	29 04
Malleable.....	21 00

FIRST QUALITY BRIGHT TIN PLATES

IC 20x28 112 sheets.....	\$25 10
IX 20x28.....	29 60
IXX 20x28 56 sheets.....	16 20
IXXX 20x28.....	17 55
IXXXX 20x28.....	18 95

TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets.....	\$27 90
IX 20x28, 40-lb. 112 sheets.....	30 90
IXX 20x28, 25-lb. 112 sheets.....	32 20
IX 20x28, 25-lb. 112 sheets.....	35 20
IC 20x28, 20-lb. 112 sheets.....	20 25
IV 20x28, 20-lb. 112 sheets.....	23 00
IC 20x28, 15-lb. 112 sheets.....	16 55

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including	
1/4 in.—100 lbs.....	\$4 55

COKE PLATES

Cokes, 80 lbs., base, 20x28.....	\$12 60
Cokes, 90 lbs., base, 20x28.....	12 50
Cokes, 100 lbs., base, 20x28.....	13 00
Cokes, 107 lbs., base, 1c	
20x28.....	13 30
Cokes, 125 lbs., base, 1A.....	15 70
Cokes, 155 lbs., base, 56	
20x28 sheets.....	8 70
Cokes, 175 lbs., base, 56	
20x28 sheets.....	9 55
Cokes, 195 lbs., base, 56	
20x28 sheets.....	10 40

BLUE ANNEALED SHEETS

Base 10 ga.....per 100 lbs.	\$2 30
"Armco" 10 ga.....per 100 lbs.	4 00

ONE PASS COLD ROLLED BLACK

No. 18-20.....per 100 lbs.	\$3 90
No. 22-24.....per 100 lbs.	3 35
No. 26.....per 100 lbs.	4 00
No. 27.....per 100 lbs.	4 05
No. 28.....per 100 lbs.	4 10

GALVANIZED

"Armco" 28.....per 100 lbs.	\$6 70
No. 16.....per 100 lbs.	4 50
No. 18-20.....per 100 lbs.	4 65
No. 22-24.....per 100 lbs.	4 80
No. 26.....per 100 lbs.	4 95
No. 27.....per 100 lbs.	5 10
No. 28.....per 100 lbs.	5 25
No. 30.....per 100 lbs.	6 75

BAR SOLDER

Warranted	
50-50.....per 100 lbs.	41 50

Commercial	
45-55.....per 100 lbs.	38 50
Plumbers.....per 100 lbs.	35 50

ZINC

In Slabs.....	\$8 50
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SHEET ZINC

Cash Lots (600 lbs.).....	\$13 75
Sheet Lots.....	14 75

BRASS

Sheets, Chicago base.....	19% c
Tubing, brazed base.....	28% c
Mill base.....	19% c
Wire, base.....	19% c
Reds, base.....	17% c

COPPER

Sheets, Chicago base.....	23c
Mill base.....	22c
Tubing, seamless base.....	26c
Wire, No. 9 B & S Ga.....	19% c
Wire, No. 10, B & S Ga.....	19% c
Wire, No. 11 B & S Ga.....	19% c
Wire, No. 8 B & S Ga. and	
heavier.....	19% c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

LEAD

American Pig.....	\$ 9 90
Bar.....	10 90

Sheet

Full Coils.....per 100 lbs.	14 00
Cut Coils.....per 100 lbs.	14 25

TIN

Pig tin.....per 100 lbs.	74 00
Bar tin.....per 100 lbs.	75 00

ASBESTOS

Paper up to 1/16.....	6c per lb.
Roll board.....	6 1/4c per lb.
Mill board 3/32 to 1/2.....	6c per lb.
Corrugated Paper (250	
sq. ft. to roll).....	\$6.00 per roll

BRUSHES

Hot Air Pipe Cleaning	
Bristle, with handle, each.....	\$0 85
Flue Cleaning	
Steel only, each.....	1 25

BURRS

Coppers Burrs only.....	45%
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CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 45
American Seal, 50-lb. cans, net	90
American Seal, 25-lb. cans, net	2 00
Asbestos, 5-lb. cans, net.....	45
Pecora.....per 100 lbs.	7 51

CHIMNEY TOPS

Iwan's Complete Rev. &	
Vent.....	30%
Iwan's Iron Mountain only.....	35%
Standard.....	30 to 40%

CLINKER TONGS

Front Rank, each.....	\$0 75
Per doz.....	8 40

CLIPS

Damper	
Acme, with tail pieces,	
per doz.....	\$1 25
Non Rivet tail pieces,	
per doz.....	25

COPPERS—Soldering Painted Roofing

3 lb. and heavier.....per lb.	40c
2 1/2 lb.....per lb.	45c
2 lb.....per lb.	45c
1 1/2 lb.....per lb.	55c
1 lb.....per lb.	60c

CORNICE BRACKES

Chicago Steel Bending	
No. 1 to 6B.....	Net

CUT-OFFS

Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd.	
standard gauge.....	40%
26 gauge.....	30%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.....	\$1 75
8 inch, each 25c, doz.....	2 40
9 inch, each 30c, doz.....	2 75
10 inch, each 32c, doz.....	3 00

Smoke Pipe

7 inch, each.....	\$0 25
8 inch, each.....	40
9 inch, each.....	50
10 inch, each.....	60
12 inch, each.....	90

Reversible Check

8 inch, each.....	\$1 50
9 inch, each.....	1 70

DIGGERS

Post Hole	
Iwan's Split Handle	
(Eureka)	
4-ft. Handle.....per doz.	\$14 00
7-ft. Handle.....per doz.	36 00
Iwan's Hercules pattern,	
per doz.....	14 90

EAVES TROUGH

Galv. Crimpedga, crated..	75 & 5%
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ELBOWS

Conductor Pipe Milcor.	
Galv., plain or corrugated,	
round flat Crimp.....	
Std. Gauge.....	65%
28 Gauge.....	60%
26 Gauge.....	40%
24 Gauge.....	10%

Square Corrugated

Standard Gauge.....	50%
No. 28 Gauge.....	45%
26 Gauge.....	30%

Portico Elbows

Standard Gauge Conductor Pipe,	
plain or corrugated.....	
Not nested.....	70 & 5%
nested solid.....	70 & 5%

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue	
"Milcor" No. 28 gauge.....	
Doz.....	
5-inch.....	\$1 15
6-inch.....	1 25
7-inch.....	1 75

Special Corrugated

5-inch.....	\$1 00
7-inch.....	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform	
Blue.....	
5-inch.....	\$1 65
6-inch.....	1 75
7-inch.....	2 40

WOOD FACES—50% off list.

726-6-12 1/4 (100 rods).....	\$28 63
1949-6-14 1/4 (100 rods).....	43 63

FENCE

726-6-12 1/4 (100 rods).....	\$28 63
1949-6-14 1/4 (100 rods).....	43 63

FILES AND RASPS

Heller's (American).....	50-10%
American.....	60-10%
Arcade.....	50%
Black Diamond.....	40-10-5%
Eagle.....	50%
Great Western.....	50%
Kearney & Foot.....	50%
McClellan.....	50%
Nicholson.....	50%
Simonds.....	60%

FIRE POTS

Otto Bernz Co.	
East of west boundary line of	
Province of Manitoba, Canada,	
No. Dakota, So. Dakota, Nebras-	
ka, Kansas, Oklahoma, Amarillo,	
San Angelo and Laredo.....	65%
Texas.....	65%
West of above boundary line	
.....	48%

Clayton & Lambert's

East of west boundary line of	
Province of Manitoba, Canada,	
No. Dakota, So. Dakota, Nebras-	
ka, Kansas, Oklahoma, Amarillo,	
San Angelo and Laredo.....	52%
Texas.....	52%
West of above boundary line	
.....	48%

Geo. W. Diener Mfg. Co.	
No. 02 Gasolene Torch, 1	
qt.....	\$ 5 55
No. 0250, Kerosene, or	
Gasolene Torch, 1 qt.....	7 50
No. 10 Tinner's Furn.	
Square tank, 1 gal.....	12 00
No. 15 Tinner's Furn.	
Round tank, 1 gal.....	12 00
No. 21 Gas Soldering Fur-	
nace.....	3 00
No. 110 Automatic Gas	
Soldering Furnace.....	10 50

Double Blast Mfg. Co.	
Gasolene, Nos. 25 and 36.....	60%

Quick Meal Stove Co.	
Vesuvius, F. O. B. St. Louis 30%	
(Extra Disc't. for large	
quantities)	

Chas. A. Hones, Inc.	
Buzzer No. 1.....	\$ 9 00
Buzzer No. 2.....	12 00
Buzzer No. 22.....	13 50
Buzzer No. 42.....	15 00
Buzzer No. 43.....	19 00

GALVANIZED WARE

Pails (Galv. after made).....	
10-qt.....	\$3 12
Tubs (Galv. after made).....	
No. 1.....	6 00
No. 2.....	6 85

GLASS

Single Strength, A, 25-in.	
brackets.....	35%
Single Strength, A, 24 to 40-	
in. bracket.....	32%
Single Strength A, all other	
brackets.....	31%
Double Strength A, all sizes.....	32%

HANGERS

Conductor Pipe	
Milcor Perfection Wire.....	25%
Eaves Trough	
Milcor Eclipse Wire.....	15%
Milcor Triplex Wire.....	10%
Milcor Milwaukee Extension 10%	
Milcor Steel (galv. after	
forming) List plus.....	12 1/2%
Milcor Selflock E. T. Wire,	
List plus.....	50%

HOOKS

Box	
V. & B. No. 1, each.....	\$0 26

Conductor	
Milcor	
"Direct Drive" Wrought	
Iron for wood or brick.....	15%

Hay	
V. & B. No. 1, each.....	\$0 26

HUMIDIFIERS

"Front-Range" Automatic	
In single lots.....	50%
In lots of 10 or more.....	50-5%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

LIFTERS

Stove Cover	
Coppered.....per gro.	\$6 00
Alaska.....per gro.	4 75

MALLETS

Tinner's	
Hickory.....per doz.	\$2 25

MITRES

Galvanized steel mitres, and	
caps, end pieces, outlets.....	30%

Milcor	
Galv. one piece stamped.....	40%

NAILS

Cut Steel.....	\$4 35
Cut Iron.....	4 35

Wire	
Common.....	3 05
Cement Coated.....	3 05

(Continued on page 169)

YES, you can get as good roofing tin today as you did in the old days if you demand Target-and-Arrow brand—formerly known as "Taylor's Old Style." It is the same kind of handmade tinplate we have been selling for nearly three-quarters of a century.

Today we alone employ the old-time Welsh method of hand-dipping. As a consequence it costs more than other kinds—hence if your specifications allow the substitution of any other brand, you are not likely to get Target-and-Arrow.

N. & G. TAYLOR COMPANY

PHILADELPHIA

H. N. TAYLOR, President

Established in the U. S. A. in 1810 by William, George and Tracy Taylor, descendants of Major John Hanbury, who introduced the art of tinning into Wales in 1703.

EVERYTHING USED IN SHEET METAL WORK

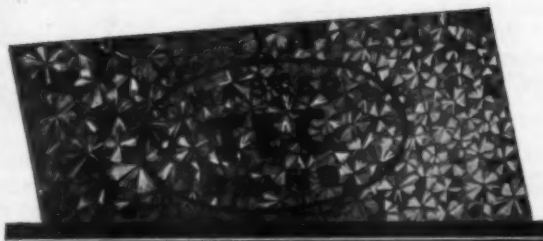
A Complete Stock Insures Prompt Shipment

In our warehouse you will find one of the most complete stocks in the country. Not only complete as to quantity but selected by men who have had many years of experience.

There are 12 men in our employ who have been with us a total of 261 years—an average of 22 years per man. It is the knowledge resulting from this experience that we offer you in Osborn Service.

The J. M. & L. A. OSBORN CO.
CLEVELAND

Buffalo Warehouse, 64-68 Rapin Street



The mark of superior quality on Galvanized Steel Sheets

INLAND "TEC" Master Brand Sheets

Inland "TEC" Master Brand sheets are now available. The Master Brand mark signifies that the sheets bearing it have been manufactured under the exacting specification of the Trade Extension Committee and are subject to constant inspection and test. Inland Master Brand sheets carry a double assurance of uniform quality; each sheet also carries the Inland brand mark.

INLAND STEEL COMPANY

General Offices: 38 South Dearborn Street, Chicago
Mills: Indiana Harbor, Ind., Chicago Heights, Ill., Milwaukee, Wis.

Branch Offices and Representatives

St. Paul Seattle St. Louis San Francisco Salt Lake City
Milwaukee Kansas City New Orleans Los Angeles

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The dash (—) indicates that the advertisement runs on a regular schedule but does not appear in this issue.

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Andes Range & Furnace Corp.	—	Monitor Furnace Co.	—
Arex Co.	—	Mt. Vernon Furn. & Mfg. Co.	—
		Mueller Furnace Co., L. J.	—
B		N	
Berger Bros. Co.	169	National Enameling & Stamp- ing Co.	146
Berger Co., L. D.	—	New Jersey Zinc Sales Co., The	—
Berns Co., Otto	175Front Cover	—
Bertach & Co.	175	Northwestern Stove Repair Co.	143
Brillion Furnace Co.	—		
Burgess Soldering Furnace Co.	175		
C		O	
Chicago Elbow Machine Co.	171	Oakland Fdy. Co.	—
Chicago Furnace Supply Co.	140	Osborn Co., The J. M. & L. A.	167
Chicago Solder Co.	—		
Clark-Smith Hardware Co.	175		
Clayton & Lambert Mfg. Co.	—		
Cleveland & Buffalo Transit Co.	142		
Cleveland Castings Pattern Co.	142		
Coes Wrench Co.	—		
Connors Paint Co., Wm.	142		
Cortright Metal Roofing Co.	169		
Copper & Brass Research As- sociation	—		
D		P	
Davis and Co., Inc., C. S.	—	Parker-Kalon Corp.	—
Diamond Mfg. Co.	175	Peck, H. E.	174
Dieckmann Co., Ferdinand	—	Peck, Stow & Wilcox Co.	—
Diener Mfg. Co.	—	Pecora Paint Co.	—
Double Blast Mfg. Co.	—	Peninsular Stove Co.	—
Double-Duty Elbow Co.	—	Peoria Wood Reg. Co.	—
Dreis & Krump Mfg. Co.	171		
E		Q	
Eaglesfield Ventilator Co.	—	Quaker Mfg. Co.	—
Excelsior Steel Furn. Co.	—	Quick Meal Stove Co.	—
F		Quincy Pattern Co.	142
Fanner Mfg. Co.	—		
Floral City Heater Co.	136		
Forest City Fdy. & Mfg. Co.	—		
Friedley-Voshardt Co.	—		
G			
Gerock Bros. Mfg. Co.	—		
Granite City Steel Works	146		
Gray & Dudley Co.	143		
Great Lakes Supply Co.	—		
H			
Hall-Neal Co.	—		
Harrington & King Perf. Co.	169		
Hart & Cooley Co.	—		
Henry Furnace & Fdy. Co.	138		
Hess-Snyder Co.	143		
Hessler Co., H. E.	175		
Homer Furnace Co.	—		
Hopson Co., W. C.	—		
Howes Co., S. M.	—		
Hussey Co., C. G.	175		
I			
Independent Register & Mfg. Co.	146		
Inland Steel Co.	167		
International Heater Co.	—		
K			
Keith Furnace Co.	—		
Kernchen Co.	174		
Kirk-Latty Co.	143		
Kruse Co.	—		
L			
Lalanc & Grosjean Mfg. Co.	—		
Lamneck & Co., W. E.	134		
Langenberg Mfg. Co.	—		
Lennox Furnace Co.	135		
Liberty Foundry Co.	—		
Lupton's Sons Co., David.	165		

Markets—Continued from page 166

NETTING, POULTRY

Galvanized before weav-	ing	57½-5%
Galvanized after weaving.	52½-5%	

PASTE

Asbestos Dry Paste:	
200-lb. barrel	\$15 00
100-lb. barrel	8 00
35-lb. pail	3 25
10-lb. bag	1 00
5-lb. bag	55
2½-lb. cartons	30

PIPE

Conductor
Cor. Rd., Plain Rd. or Sq.

"Interlock" Galvanized

Crated and nested (all gauges)	75-2½%
Crated and not nested (all gauges)	70-15%
"Milcor" "Tittlelock" Uniform Blue Stove	
28 gauge, 5 inch U. C. nested	11 00
28 gauge, 6 inch U. C. nested	12 00
28 gauge, 7 inch U. C. nested	14 00
30 gauge, 5 inch U. C. nested	10 00
30 gauge, 6 inch U. C. nested	10 50
30 gauge, 7 inch U. C. nested	13 00

T-Joint Made up

6-inch, 28 ga.	per 100 32 50
---------------------	---------------

Furnace Pipe

Double Wall Pipe and Pipe Fittings	40-10%
Single Wall Pipe, Round Iron Pipe Galvanized	40-10%
Galvanized and Black Fittings	40-10%
Milcor Galvanized Pipe and Fittings	40-10%

Lead

Per 100 lbs.	\$12 50
-------------------	---------

POKERS, STOVE

Wrt Steel, str't or bent.	per doz. \$0 75
Nickel Plated, coil handles.	per doz. 1 10

POKERS, FURNACE

Each	\$0 50
------------	--------

FULLEYS

Furnace Tackle	per doz. \$0 60
.....	per gross 6 00
Furnace Screw (encased)	per doz. 75

Ventilating Register

Per gross	9 00
Small, per pair	30
Large, per pair	50

PUTTY

Commercial Putty, 100-lb. kits	\$3 40
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QUADRANTS

Malleable Iron Damper	10%
-----------------------------	-----

REDUCERS—Oval Stove Pipe	
Per doz.	Per doz. \$2 00
7-8, 1 doz. in carton	

BASEBOARD REGISTERS

Excelsior	50%
-----------------	-----

FLOOR REGISTERS AND BORDERS

Cast Iron	20%
Steel and Semi-Steel	40%
Baseboard	40%
Adjustable Ceiling Ventilators	40%

Register Faces—Cast and Steel

Japanned, Bronzed and Plated, 4x6 to 14x14	40%
Large Register Faces—Cast, 14x14 to 38x42	60%
Large Register Faces—Steel, 14x14 to 38x42	65%

RIDGE ROLL

Milcor Galv. Plain Ridge Roll.	75-10-5%
Galv. Plain Ridge Roll.	75-10%
crated	75-10%
Globe Finials for Ridge Roll.	50%

ROOFING

	Per Square
Best grade, slate surf. prep'd	\$2 30
Best talc surfaced	2 65
Medium talc surfaced	2 00
Light talc surfaced	1 20
Red Rosin Sheeting, per ton	57 00

SCREWS

Sheet Metal	
No. 7, ¼x¼, per gross	\$0 52
No. 10, ¼x¼, per gross	63
No. 14, ¼x¼, per gross	89

SHEARS, TINNERS' & MACHINISTS'

Viking	\$22 00
Lennox Throatless	
No. 18	35%
Shear blades	10%
(f. o. b. Marshalltown, Iowa.)	

SHOES

Milcor	
Galv. Std. Gauge, Plain or corg. round flat crimp	65%
28 gauge round flat crimp	40%
24 gauge round flat crimp	10%
Conductor	65%

SNIPS, TINNERS'

Clover Leaf	40 & 10%
National	40 & 10%
Star	50%
Milcor	Net

SQUARES

Steel and Iron	Net
(Add for bluing, \$3 per doz. net.)	
Mitre	Net
Try	Net
Try and Bevel	Net
Try and Mitre	Net
Fox's	per doz. \$6 00
Winterbottom's	10%

STOPPERS, FLUE

Common	per doz. \$1 10
Gem, No. 1	per doz. 1 10
Gem, flat, No. 3	per doz. 1 00

VENTILATORS

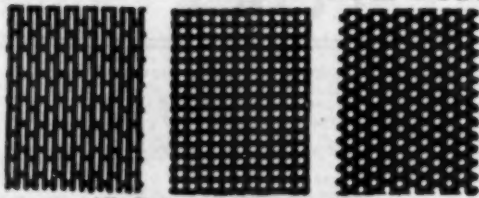
Standard	30 to 40%
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WIRE

Plain annealed wire, No. 8 per 100 lbs.	\$3 05
Galvanized barb wire, per 100 lbs.	3 90
Wire cloth—Black painted, 12-mesh, per 100 sq. ft.	1 75
Cattle Wire—galvanized catch weight spool, per 100 lbs.	3 85
Galvanized Hog Wire, 80 rod spool, per spool	3 34
Galvanized plain wire, No. 9, per 100 lbs.	3 50
Stove Pipe, per stone	1 10

WRINGERS

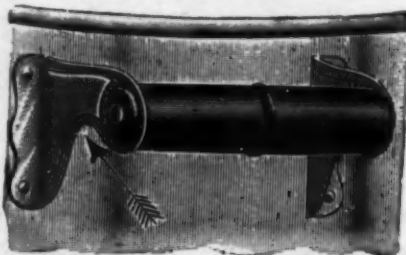
No. 750, Guarantee per doz.	\$55 00
No. 770, Bicycle per doz.	53 50
No. 670, Domestic per doz.	48 50
No. 110, Brighton per doz.	43 50
No. 750, Guarantee per doz.	55 50
No. 740, Bicycle per doz.	53 50
No. 22, Pioneer per doz.	29 00
No. 3, Superb per doz.	29 00

PERFORATED METALS

All Sizes and Shapes of Holes
In Steel, Zinc, Brass, Copper, Tinplate, etc.
For All Screening, Ventilating and Draining
EVERYTHING IN PERFORATING METAL

THE HARRINGTON & KING PERFORATING CO.

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WE make a complete line of Boiler Handles.

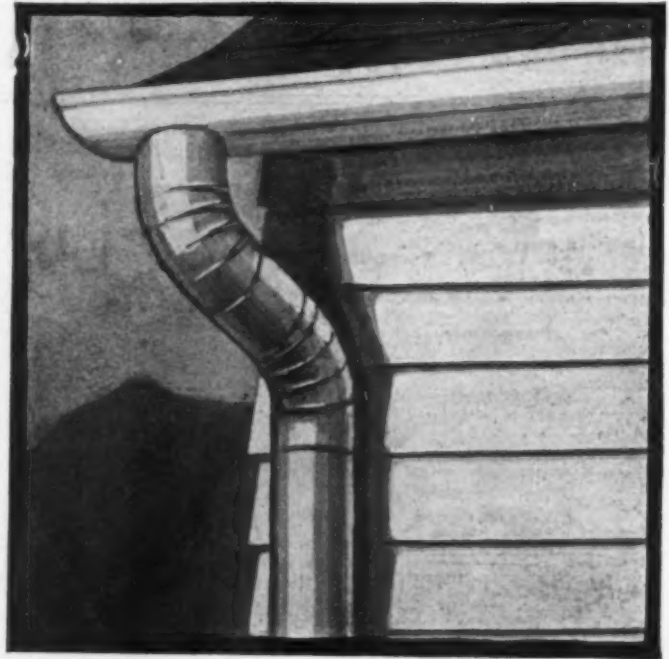
Also handles for Boiler Covers.
Cut shows No. 40 style.
Let us send you samples.

Complete catalog on request.

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229 to 237 ARCH STREET PHILADELPHIA, PA.

Warerooms and Factory: 100 to 114 Broad Street
Manufacturers of "Quaker City" line of Meters, Ends, Caps and Outlets



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SMALL jobs become big jobs when you use ARMCO Ingot Iron. Your customers are satisfied; they pass the word on to their friends and neighbors, and it means more business with bigger profits for your shop.

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You can make your business grow and thrive by recommending ARMCO Ingot Iron. Its durability, rust-resistance, and workability have helped pave the way to success for more than one contractor.

It will for you, too. Take the first step by requesting a copy of our new booklet, "Advertising to Sell Your Services." It's free for the asking.



The difference between the two kinds of Galvanized Shingles is this:

HAND Dipped Galvanized Shingles are made from prime tin plate and immersed in molten zinc—all edges, as well as both sides are coated.

The other kind are made from sheets which come already galvanized.

We make both kinds.

CORTRIGHT METAL ROOFING CO.
50 N. 23rd Street, Philadelphia
528 S. Clark Street, Chicago

CORTRIGHT METAL SHINGLES

The NEW IMPROVED STANDARD Rotable Ventilator



The New Standard

This favorite cone-shaped ventilator is now improved in several important points.

The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.

The bronze Guide Bushings are now made of non-corrosive bronze which minimizes friction and any tendency to screech when body is rotating.

There are other new features. Write today for new catalog and price list.

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Buy you saw it in AMERICAN ARTISAN—Thank you!

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Asbestos Products.
Sall Mountain Co., Chicago, Ill.

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American Steel & Wire Co., Chicago, Ill.

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Sturtevant Co., B. F., Boston, Mass.

Bolts—Stove.
The Kirk-Latty Co., Cleveland, Ohio

Brakes—Bending.
Dreis & Krump Mfg. Co., Chicago, Ill.

Brakes—Cornice.
Dreis & Krump Mfg. Co., Chicago, Ill.

Brass and Copper
Copper & Brass Research Association, New York
Hussey & Co., C. G., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.

Cans—Garbage.
Osborn Co., The J. M. & L. A., Cleveland, Ohio

Castings—Malleable.
Fanner Mfg. Co., Cleveland, Ohio

Ceilings—Metal.
Friedley-Voshardt Co., Chicago, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.
Wheeling Corrugating Co., Wheeling, W. Va.

Chaplets.
Fanner Mfg. Co., Cleveland, Ohio

Chain—Sash.
Parker-Kalon Corp., New York, N. Y.

Chimney Tops.
Standard Ventilator Co., Lewisburg, Pa.

Cleaners—Furnace.
Sturtevant, Boston, Mass.

Cleaners—Suction.
Sturtevant, Boston, Mass.

Copper.
Copper & Brass Research Association, New York
Hussey & Co., C. G., Pittsburgh, Pa.

Cornices.
Friedley-Voshardt Co., Chicago, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.

Cut-Offs—Rain Water.
Milwaukee Corrugating Co., Milwaukee, Wis.

Dampers.
S. M. Howes Co., Charlestown, Mass.

Damper Clips.
S. M. Howes Co., Charlestown, Mass.

Diffuser—Air Duct.
Aeolus-Dickinson Co., Chicago, Ill.

Doors—Metal.
David Lupton's Sons Co., Philadelphia, Pa.

Eaves Trough.
Berger Bros. Co., Philadelphia, Pa.

Excessor Steel Furnace Co.
Berger Co., L. D., Philadelphia, Pa.

Clark-Smith Hardware Co.
Lupton's Sons Co., David, Peoria, Ill.

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New Jersey Zinc Sales Co., The, New York, N. Y.

Wheeling Corrugating Co.
Wheeling, W. Va.

Elbows and Shoes—Conductor.
American Rolling Mill Co., Middletown, Ohio

Dieckmann Co., Ferdinand.
Cincinnati, Ohio

Double-Duty Elbow Co., Aurora, Ill.
Lupton's Sons Co., David., Philadelphia, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.

Enamel Wire.
Lalanc & Grosjean Mfg. Co., Chicago, Ill.

Wood Faces—Cold Air.
American Wood Register Co., Plymouth, Ind.
Eaglesfield Ventilator Co., Indianapolis, Ind.
Milwaukee Corrugating Co., Milwaukee, Wis.

Fences.
American Steel & Wire Co., Chicago, Ill.

Flue Thimbles.
Milwaukee Corrugating Co., Milwaukee, Wis.

Furnace Cement—Asbestos.
Connors Paint Mfg. Co., Wm., Troy, N. Y.
Milwaukee Corrugating Co., Milwaukee, Wis.
Pecora Paint Co., Philadelphia, Pa.
Sall Mountain Co., Chicago, Ill.

Furnace Cleaners.
Sturtevant Co., B. F., Boston, Mass.

Furnace Fans.
Sturtevant Co., B. F., Boston, Mass.
Warm Air Furnace Fan Co., The, Cleveland, Ohio

Furnace Rings.
Milwaukee Corrugating Co., Milwaukee, Wis.
Walworth Run Fdy. Co., Cleveland, Ohio

Furnaces—Warm Air.
American Furnace Co., St. Louis, Mo.
American Foundry & Furnace Co., Bloomington, Ill.
Andes Range & Furnace Corp., Geneva, N. Y.
Brillion Iron Works, Brillion, Wis.

Chicago Furnace Supply Co., Chicago, Ill.
Excelsior Steel Furnace Co., Chicago, Ill.

Floral City Heater Co., Monroe, Mich.
Forest City Fdy. & Mfg. Co., Cleveland, Ohio

Gray & Dudley Co., Nashville, Tenn.
Hall-Neal Furnace Co., Indianapolis, Ind.

Henry Furnace & Fdy. Co., Cleveland, Ohio
Hess-Snyder Co., Massillon, Ohio

Homer Furnace Co., Coldwater, Mich.
International Heater Co., Utica, N. Y.

Kruse Co., Indianapolis, Ind.
Lamneck Co., W. E., Columbus, Ohio

Langenberg Mfg. Co., St. Louis, Mo.
Lennox Furnace Co., Marshalltown, Ia.; Syracuse, N. Y.

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Marshalltown Heater Co., Marshalltown, Iowa

May-Fleiseger Furnace Co., Newark, Ohio
Meyer Furnace Co., The, Peoria, Ill.

Monitor Furnace Co., Cincinnati, Ohio
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.

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Oakland Foundry Co., Belleville, Ill.

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Quaker Mfg. Co., Chicago, Ill.

Robinson Furnace Co., Chicago, Ill.
Rybolt Heater Co., Ashland, Ohio

Schwab & Sons Co., R. J., South Chicago, Ill.
Security Stove & Mfg. Co., Kansas City, Mo.

Standard Foundry & Mfg. Co., DeKalb, Ill.

Standard Furnace & Supply Co., Omaha, Neb.
St. Clair Foundry Corporation., Centralia, Ill.

St. Louis Heating Co., St. Louis, Mo.
Success Heater Mfg. Co., Des Moines, Iowa

Thatcher Co., Chicago, Ill.
Utica Heater Co., Utica, N. Y.

Waterman-Waterbury Co., Minneapolis, Minn.
Western Steel Products Co., Duluth, Minn.

Wise Furnace Co., Akron, Ohio
Williamson Heater Co., Cincinnati, Ohio

Garages—Metal.
Milwaukee Corrugating Co., Milwaukee, Wis.

Glass—Wire.
David Lupton's Sons Co., Philadelphia, Pa.

Grilles.
Diamond Mfg. Co., Wyoming, Pa.
Hart & Cooley Co., New Britain, Conn.

Independent Register & Mfg. Co., Cleveland, Ohio
Tuttle & Bailey Mfg. Co., Chicago, Ill.

Handles—Boiler.
Berger Bros. Co., Philadelphia, Pa.

Hangers—Eaves Trough.
Berger Co., L. D., Philadelphia, Pa.

Milwaukee Corrugating Co., Milwaukee, Wis.

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Gray & Dudley Co., Nashville, Tenn.

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Peninsular Stove Co., Detroit, Mich.

Waterman-Waterbury Co., Minneapolis, Minn.

Heaters—School Room.
Floral City Heater Co., Monroe, Mich.

Meyer Furnace Co., The, Peoria, Ill.
Standard Furnace & Supply Co., Omaha, Neb.

Waterman-Waterbury Co., Minneapolis, Minn.

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Berger Co., L. D., Philadelphia, Pa.

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Robinson Furnace Co., Chicago, Ill.

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Clark-Smith Hardware Co., Peoria, Ill.

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Bertsch & Co., Cambridge City, Ind.

Machinery—Culvert.
Bertsch & Co., Cambridge City, Ind.

Machines—Tin-Smiths.
Bertsch & Co., Cambridge City, Ind.

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Great Lakes Supply Co., Chicago, Ill.
Marshalltown Mfg. Co., Marshalltown, Iowa

Osborn Co., The J. M. & L. A., Cleveland, Ohio

Peck, Stow & Wilcox Co., Southington, Conn.
Unishear Co., The, New York, N. Y.

Whitney Mfg. Co., W. A., Rockford, Ill.
Whitney Metal Tool Co., Rockford, Ill.

Metals—Perforated.
Diamond Mfg. Co., Wyoming, Pa.
Harrington & King Perforating Co., Chicago, Ill.

Miters.
Friedley-Voshardt Co., Chicago, Ill.

Milwaukee Corrugating Co., Milwaukee, Wis.

Miters—Eaves Trough.
David Lupton's Sons Co., Philadelphia, Pa.

Milwaukee Corrugating Co., Milwaukee, Wis.

Nails—Slatting.
Hussey & Co., C. G., Pittsburgh, Pa.

Nails—Wire.
American Steel & Wire Co., Chicago, Ill.

Oil Burners.
Security Stove & Mfg. Co., Kansas City, Mo.

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Ornaments—Sheet Metal.
Friedley-Voshardt Co., Chicago, Ill.

Geroch Bros. Mfg. Co., St. Louis, Mo.
Milwaukee Corrugating Co., Milwaukee, Wis.

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Connors Paint Mfg. Co., Wm., Troy, N. Y.

Pecora Paint Co., Philadelphia, Pa.

Patterns—Furnace & Stove.
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Quincy Pattern Co., Quincy, Ill.
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Pipe and Fittings—Furnace.
Chicago Furnace Supply Co., Chicago, Ill.

Excelsior Steel Furnace Co., Chicago, Ill.
Henry Furnace & Fdy. Co., Cleveland, Ohio

Lamneck Co., W. E., Columbus, Ohio
Meyer & Bro. Co., F., Peoria, Ill.

Milwaukee Corrugating Co., Milwaukee, Wis.
Mueller Furnace Co., L. J., Milwaukee, Wis.

Osborn Co., The J. M. & L. A., Cleveland, Ohio
Robinson Furnace Co., Chicago, Ill.

Standard Furnace & Supply Co., Omaha, Neb.

Pipe and Fittings—Stove.
Excelsior Steel Furnace Co., Chicago, Ill.

Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.

Pipe—Conductor.
Berger Bros. Co., Philadelphia, Pa.

Clark-Smith Hdw. Co., Peoria, Ill.
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Widest known—Most universally used



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**NEW SKYLIGHT
CLOSE CORNER
FLANGE PUNCH**

Every Sheet Metal Worker Needs One.

Weights Only 12 Lbs.

1-2 Inch Opening Above Die Top.



Skyline Punch

**EASIEST OPERATED
QUICKEST CHANGED
FREQUENTLY PAY FOR THEMSELVES
ON FIRST JOB**

Over 40,000 In Use

MADE IN 6 SIZES



Channel Iron Punch

OTHERS FOLLOWING



No. 2 Punch

ASK YOUR JOBBER

or
Write us, for circulars and prices.

**W. A. Whitney
Mfg. Co.
715 Park Ave.,
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No. 4 Tinner's Punch



No. 8 Punch

MAKE YOUR OWN ELBOWS—

Any Size in Two Minutes with this Machine.

JUST take your straight pipe—fasten the form or jig to it and in two minutes you have your 3 or 4 piece adjustable elbow all ready for use and any size you want.

PURNELL ELBOW EDGING and CUTTING MACHINE

It is simple, sound and constructed of the very best materials—both installers and manufacturers are using it. No more large stock for the installer. Enables you to make adjustable elbows any size for each job at once when you need them.

Write today for circular giving complete description and price.

Chicago Elbow Machine Co.

MAIN OFFICE: 826 N. Boulevard,
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Range of capacity 7 in. to 36 in. Elbows of No. 24 gauge and lighter

CHICAGO STEEL CORNICE BRAKES

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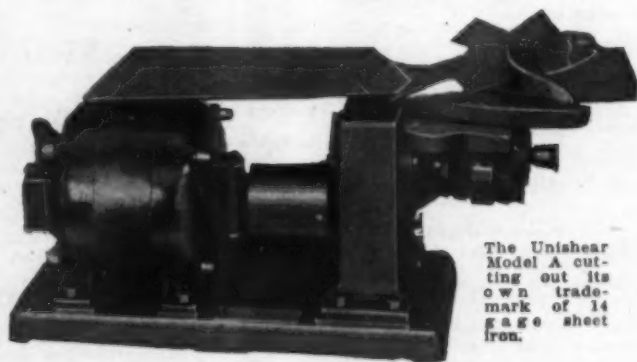
THE BEST BRAKE FOR ALL PURPOSES:
Most Durable, Easiest Operated, Low in Price;
Made in All Lengths and to Bend All Gauges of Metal. Over 23,000 in use.

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UNISHEAR

**You Need
this Portable Sheet Metal
Cutter in your Shop**



The Unishear Model A cutting out its own trade-mark of 14 gage sheet iron.

*Quickly saves its cost
by its many time-saving uses*

The UNISHEAR Model A weighs only 50 lbs. and operates from any convenient lamp socket—yet it is powerful enough to cut any straight, curved or irregular shape out of steel up to No. 14 U. S. Gage at any desired speed up to 15 feet per minute.

One man operates it by lightly feeding the material between the cutting jaws. The cut can be started or stopped instantly. There is no possibility of the operator's finger being caught and injured. A SAFE machine that is popular with the men because it makes their work easier.

The cut is clean and smooth and has no burr. Use the UNISHEAR on your shop production work or for general sheet metal repairs.

SPECIFICATIONS: MODEL A

CAPACITY: Steel Sheets up to No. 14 U. S. Gage.

Copper, etc., up to No. 12 U. S. Gage.

SPEED: Up to 15 ft. per minute.

MOTOR: G. E., ¼ H. P., either A.C. or D.C.

Specify Voltage and Cycles with order.

WEIGHT: 50 lbs. net, 70 lbs. gross.

DIMENSIONS: Packed 20 x 10 x 10 in.

For work requiring the cutting of curves smaller than 3¼ inches in radius (down to less than 3/32 inch radius), and for inside cutting without a starting hole, we manufacture Models O-15, O-26 and O-54, which have throats of 15 inches, 36 inches and 54 inches respectively.

We will gladly demonstrate the UNISHEAR on your work.

**THE UNISHEAR COMPANY, Inc.
170 Fifth Avenue, New York, N. Y.**

For export apply to
Unishear Export Corporation, 104 Fifth Avenue, New York, N. Y.

Mention AMERICAN ARTISAN in your reply—Thank you!

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Rockford, Ill.
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Rockford, Ill.

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Whitney Metal Tool Co.,
Rockford, Ill.
Whitney Mfg. Co., W. A.,
Rockford, Ill.

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Whitney Metal Tool Co.,
Rockford, Ill.
Whitney Mfg. Co., W. A.,
Rockford, Ill.

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St. Louis, Mo.
Thatcher Co.,
Newark, N. J.

Ranges—Gas.

Quick Meal Stove Co.,
St. Louis, Mo.
Gray & Dudley Co.,
Nashville, Tenn.

Registers—Warm Air.

American Wood Register Co.,
Plymouth, Ind.
Chicago Furnace Supply Co.,
Chicago, Ill.
Eaglesfield Ventilator Co.,
Indianapolis, Ind.
Excelsior Steel Furnace Co.,
Chicago, Ill.
Hart & Cooley Co.,
New Britain, Conn.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Independent Register & Mfg. Co.,
Cleveland, Ohio
Lamneck & Co., W. E.,
Columbus, Ohio
Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
Mueller Furnace Co., L. J.,
Milwaukee, Wis.
Peoria Wood Register Co.,
Peoria, Ill.
Robinson Furnace Co.,
Chicago, Ill.
Rock Island Register Co.,
Rock Island, Ill.
Standard Furnace & Supply Co.,
Omaha, Neb.
Stearns Register Co.,
Detroit, Mich.
Tuttle & Bailey Mfg. Co.,
Chicago, Ill.
Walworth Run Fdy. Co.,
Cleveland, Ohio

Registers—Wood.

American Wood Register Co.,
Plymouth, Ind.
Chicago Furnace Supply Co.,
Chicago, Ill.
Eaglesfield Ventilator Co.,
Indianapolis, Ind.
Peoria Wood Register Co.,
Peoria, Ill.

Repairs—Stove and Furnace.

Hessler Co., H. E.,
Syracuse, N. Y.
Northwestern Stove Repair Co.,
Chicago, Ill.

Ridging.

American Rolling Mill Co.,
Middletown, Ohio
David Lupton's Sons Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Rivets—Stove.

The Kirk-Latty Co.,
Cleveland, Ohio

Roasters.

Lalanc & Grosjean Mfg. Co.,
Chicago, Ill.

Rods—Stove.

The Kirk-Latty Co.,
Cleveland, Ohio

Rolls—Forming.

Bertsch & Co.,
Cambridge City, Ind.

Roofing Cement.

Connors Paint Mfg. Co., Wm.,
Troy, N. Y.
Pecora Paint Co.,
Philadelphia, Pa.

Roof—Flashing.

Hessler Co., H. E., Syracuse, N. Y.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Roofing—Iron and Steel.

American Roofing Mill Co.,
Middletown, Ohio
Cortright Metal Roofing Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
Granite City Steel Works,
Granite City, Ill.
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
National Enameling and Stamping Co.,
Granite City, Ill.
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Wheeling Corrugating Co.,
Wheeling, W. Va.

Roofing—Tin.

Taylor Co., N. & G.,
Philadelphia, Pa.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Roofing—Zinc.

New Jersey Zinc Sales Co., The,
New York, N. Y.

Rubbish Burners.

Hart & Cooley Co.,
New Britain, Conn.

Salt—Ammoniac.

Special Chemicals Co.,
Waukegan, Ill.

Schools—Sheet Metal Pattern Drafting.

St. Louis Technical Institute,
St. Louis, Mo.

Screws—Sheet Metal.

Parker-Kalon Corp.,
New York, N. Y.

Screens—Perforated Metal.

Harrington & King Perforating Co.,
Chicago

Shears—Hand and Power.

Double-Duty Elbow Co.,
Aurora, Ill.
Marshalltown Mfg. Co.,
Marshalltown, Iowa
Peck, Stow & Wilcox Co.,
Southington, Conn.
Unishear Co., The,
New York
Viking Shear Co.,
Erie, Pa.

Sheets—Black and Galvanized.

American Rolling Mill Co.,
Middletown, Ohio
Davis Co., Inc., C. S., Chicago, Ill.
Granite City Steel Works,
Granite City, Ill.
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
National Enameling and Stamping Co.,
Granite City, Ill.
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Taylor Co., N. & G.,
Philadelphia, Pa.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Sheets—Iron.

American Rolling Mill Co.,
Middletown, Ohio
Merchant & Evans Co.,
Philadelphia, Pa.

Sheets—Tin.

Davis Co., Inc., C. S., Chicago, Ill.
Granite City Steel Works,
Granite City, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
National Enameling and Stamping Co.,
Granite City, Ill.
Taylor Co., N. & G.,
Philadelphia, Pa.

Sheets—Zinc.

New Jersey Zinc Sales Co., The,
New York, N. Y.

Shingles and Tiles—Metal.

Cortright Metal Roofing Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Shingles—Asphalt.

Sall Mountain Co.,
Chicago, Ill.

Shingles—Zinc.

Milwaukee Corrugating Co.,
Milwaukee, Wis.

Sifters—Ash.

Diener Mfg. Co., G. W.,
Chicago, Ill.

Sky Lights.

David Lupton's Sons Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Snips.

Peck, Stow & Wilcox Co.,
Southington, Conn.

Solder.

Chicago Solder Co., Chicago, Ill.
Double-Duty Elbow Co.,
Aurora, Ill.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Solder—Aluminum.

Ziener Aluminum Solder Co.,
Rockford, Ill.

Soldering Furnaces.

Berns Co., Otto, Newark, N. J.
Burgess Soldering Furnace Co.,
Columbus, Ohio
Clayton & Lambert Mfg. Co.,
Detroit, Mich.

Diener Mfg. Co., G. W.,
Chicago, Ill.

Double Blast Mfg. Co.,
North Chicago, Ill.

Quick Meal Stove Co.,
St. Louis, Mo.

Soldering Supplies.

Double-Duty Elbow Co., Aurora, Ill.
Special Chemicals Co.,
Waukegan, Ill.

Specialties—Hardware.

Diener Mfg. Co., G. W.,
Chicago, Ill.

Hessler Co., H. E., Syracuse, N. Y.

Stairs—Hard Iron Cleaning.

Fanner Mfg. Co., Cleveland, Ohio

Statuary.

Friedley-Voshardt Co.,
Chicago, Ill.

Geroch Bros. Mfg. Co.,
St. Louis, Mo.

Steel Stampings.

American Tube & Stamping Co.,
Bridgeport, Conn.

Stove Pipe Reducers.

Milwaukee Corrugating Co.,
Milwaukee, Wis.

Stoves—Camp.

Quick Meal Stove Co.,
St. Louis, Mo.

Stoves—Gasoline and Oil.

Quick Meal Stove Co.,
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Andes Range & Furnace Corp.,
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Gray & Dudley Co.,
Nashville, Tenn.
Oakland Foundry Co.,
Belleville, Ill.

Peninsular Stove Co.,
Detroit, Mich.

Quick Meal Stove Co.,
St. Louis, Mo.

Thatcher Co.,
Newark, N. J.

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Chicago, Ill.

Tile Cement—Elastic.

Pecora Paint Co.,
Philadelphia, Pa.

Tinplate.

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Granite City Steel Works,
Granite City, Ill.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
National Enameling and Stamping Co.,
Granite City, Ill.
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Taylor Co., N. & G.,
Philadelphia, Pa.

Tin—Perforated.

Harrington & King Perforating Co.,
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Tools—Tinmith's.

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Chicago Elbow Machine Co.,
Oak Park, Ill.
Dreis & Krump Mfg. Co.,
Chicago, Ill.
Great Lakes Supply Co.,
South Chicago, Ill.
Hopson & Co., W. C.,
Grand Rapids, Mich.
Marshalltown Mfg. Co.,
Marshalltown, Iowa
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Peck, Stow & Wilcox Co.,
Southington, Conn.
Unishear Co., The, New York, N. Y.
Viking Shear Co.,
Erie, Pa.
Whitney Mfg. Co., W. A.,
Rockford, Ill.
Whitney Metal Tool Co.,
Rockford, Ill.

Torches.

Berns Co., Otto, Newark, N. J.
Burgess Soldering Furnace Co.,
Columbus, Ohio
Clayton & Lambert Mfg. Co.,
Detroit, Mich.
Diener Mfg. Co., G. W.,
Chicago, Ill.
Double Blast Mfg. Co.,
North Chicago, Ill.
Quick Meal Stove Co.,
St. Louis, Mo.

Trade Extension.

Copper & Brass Research Association,
New York, N. Y.
Sheet Steel Trade Extension Committee,
Pittsburgh, Pa.

Transit Companies.

Cleveland & Buffalo Transit Co.,
Cleveland, Ohio

Trimnings—Stove.

Fanner Mfg. Co., Cleveland, Ohio.

Ventilators.

Arax Company, Chicago, Ill.
Aeolus Dickinson Co., Chicago, Ill.
Berger Bros. Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
David Lupton's Sons Co.,
Philadelphia, Pa.
Kernchen Co.,
Chicago, Ill.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
Royal Ventilator Co.,
Philadelphia, Pa.
Standard Ventilator Co.,
Lewisburg, Pa.
Sturtevant Co.,
Boston, Mass.

Ventilators—Ceiling.

Eaglesfield Ventilator Co.,
Indianapolis, Ind.
Hart & Cooley Co.,
New Britain, Conn.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Independent Register & Mfg. Co.,
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American Steel & Wire Co.,
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American Steel & Wire Co.,
Chicago, Ill.

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American Steel & Wire Co.,
Chicago, Ill.

Wrenches.

Coss Wrench Co.,
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Zinc.

Merchant & Evans Co.,
Philadelphia, Pa.

New Jersey Zinc Co., The,
New York, N. Y.

Mention AMERICAN ARTISAN in your reply—Thank you!

WANTS AND SALES

Any yearly subscriber to **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired.

BUSINESS CHANCES

LIGHTNING RODS—Dealers who are selling Lightning Protection will make money by writing us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable is endorsed by the Mutual Insurance Companies and hundreds of reliable dealers. Write today for samples and prices. L. K. DIDDLE CO., Marshfield, Wis.

For Sale—A half interest in the best and fastest growing sheet metal kitchen equipment shop on the Pacific Coast. In a city of 350,000; no end to the trade. Doing a business of \$20,000; can be enlarged to \$50,000 in the next two years. This is too large for my capital and management; must have good help and capital; \$3,500 to \$4,000 will swing this. Address X-38, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 7-3t

For Sale—Sheet metal and auto radiator work. Located in city of 30,000 population, in central Wisconsin. Machines, stock and tools inventories \$1,425.00. \$1,200.00 buys it if taken at once. Selling on account of other business. One-half cash down, balance paid off on monthly payments. Address B-51, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 9-3t

For Sale—In Chicago, tin shop, general sheet metal, furnace and roofing. An established business of years' standing, fully equipped. Ideal location, plenty of work all the year around. Will stand the closest investigation. Poor health forces owner to sell. Address X-37, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 7-3t

For Sale—Retail hardware store. Located in good town of about 1000. Good rich farming country. Stock will invoice about \$11,000, building rents complete with fixtures. Have tin shop complete with tools. Will sell on good terms. Address Box X-43, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

For Sale—The best chance in eastern Iowa. Fully equipped sheet metal, plumbing and heating shop. Average \$18,000 to \$20,000 annually. Will sell for cash or terms. If you are planning on a business proposition it will pay you to investigate this before buying. Address X-32, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 6-3t

For Sale—Tin and warm air furnace shop in town of 6000 population, doing good business, one other shop in town. Reason for selling, wish to engage in other business. Stock and tools will invoice about \$900.00 or \$950.00. If interested address Glenn D. George, York, Nebraska. 8-3t

Send \$2.00 for pattern and directions for making roof saddle for chimneys. Made out of one sheet of galvanized iron and 2 hours' time and sells easily at \$4.50. When once used, carpenters and masons will use no other method as it saves its price in labor. Address G. A. Sipma, Hesperia, Iowa. 2-3t

For Sale—Plumbing, heating and tin shop in a city of 2,000 in Missouri. Plenty of work the year around. Will rent building. Address X-39, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 7-3t

For Sale—80 acres of good land for sale or trade for tin shop, stock of hardware. Address Box 548, Pierre, South Dakota. 8-3t

BUSINESS CHANCES

For Sale—Sheet metal shop. Stock and tools less than \$2,000. Rent \$25 month. Established. Only shop in town of 7,000 population. Good paying business. Best of reasons for selling. Write or come to J. H. Hopkins' Tin Shop, 1420 Locust St., Eldorado, Illinois. 9-3t

For Sale—Fully equipped plumbing, heating and tin shop. Reasons for selling on account of husband's death. Will sell at a real bargain. Address Mrs. D. E. Schrader, Charles City, Iowa. 9-4t

For Sale—Sheet Metal Shop. Plenty of work all year around. Good suburb near Chicago. Address B-50, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 9-3t

HELP WANTED

Wanted—A first-class tinner and furnace man in town of 3,000 inhabitants. One that can take charge of shop. Steady place year around. Must be a good workman. The town has five churches, M. E. Church, Universal Congregation, Christian and Catholic. Two grade schools, high and college. A modern town, all the downtown streets newly paved and well lighted. We work 9 hours and pay \$35 per week. Address Shipplett-Moloney Co., Abingdon, Illinois. 9-3t

Wanted—First class superintendent for sheet metal and roofing shop, working 20 to 30 men. Must be layout and erection man. Must have complete knowledge of the business. Must be good executive and able to get results. If you are this kind of a man get in touch with us at once and prove it to us. Wire, telephone or write, our expense. Martindale Roofing Company, 11 East Fourteenth Street, Jacksonville, Florida. 7-3t

Wanted—Foreman for gas range department. Must be experienced and able to take charge of all assembly and mounting. State experience and name companies associated, with length of service, together with salary expected. Address X-40, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 7-3t

Wanted—A real first class all around mechanic, experienced in all kinds of general job and furnace work, gutters, tin roofs, etc. Steady work at good wages if you can deliver. Send age and references. Address X-42, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

Bookkeeper Wanted—Should be one who has had hardware experience. State age, salary expected, church preference and other important information in first letter. Direct it to the Schlafer Hardware Company, Appleton, Wisconsin, attention of Mr. George Nixon. 9-3t

Wanted—At once, experienced sheet metal worker and furnace man in a town of 5,000, with good schools and churches. State age, experience, wages wanted and how soon you can get on job. In first letter. Address Boyle Metal Works, Blackfoot, Idaho. 7-3t

Wanted—Experienced mechanic, competent to make galvanized iron and copper specialties, light work and permanent job for elderly man with first class mechanical training. State ability and wages wanted. Address Box 147, Comfort, Texas. 9-3t

Wanted—First class tinner and skylight makers, who are above the average in ability and can come at once. Plenty of work. Steady job. \$1.25 per hour. Must be steady, competent workmen. Address Box 1936, St. Petersburg, Florida. 8-3t

Wanted—An experienced all around sheet metal worker and furnace man. Married man preferred. Steady work to the right man. Address A. T. Hall Company, 195 Colfax Avenue, Benton Harbor, Michigan. 7-3t

Wanted—A live salesman for a high grade steel furnace. Call on dealers only. Chicago territory. Permanent position. Address X-44, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

Wanted—At once, six first class sheet metal workers. Must be fast and accurate. \$1.00 per hour 10 hours per day. Address Frank Barnes, Sheet Metal Works, Greenville, Mississippi. 8-3t

Wanted—First-class tinner and furnace man at once. Work year around for right man. Address Wm. Smith, Sheet Metal Works, Geneva, Illinois. 9-3t

HELP WANTED

Wanted—Capable hardware clerk in suburb of Chicago. Must be sober and reliable. A-1 position for right party. Give references. Address X-46, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

Wanted—At once, a man that can do work that comes in a country tin shop. Also some knowledge of plumbing. I will pay \$30 per week the year around for this kind of man. Address O. L. Doward, Mt. Morris, Illinois. 9-3t

Wanted—At once, furnace installer or sheet metal worker in town of 13,000. State age, experience, wages wanted and how soon you can get on job in first letter. Address C. P. Toig & Son, 238 Broadway, Waukesha, Wisconsin. 8-3t

Wanted—Plumber who can do some steam fitting. Must be first class mechanic. Will pay \$1.50 per hour. This is an open shop. Address R. D. Grieves, 109 East Front Street, Wheaton, Illinois. 7-2t

Wanted—Salesman to sell Gilt-Edge furnaces. Address X-48, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 9-3t

Wanted—Plumber and fitter, steady position for competent man. Answer, giving experience. Address Charles Soames, Peru, Indiana. 8-3t

SITUATION WANTED

Situation Wanted—On account of bank closing, I am open for a good steady job as tinner and plumber. Have had 25 years experience in the trades. Am 38 years old, married, and am an all around man who can take full charge of shop. Have been in business for myself the last 5 years. Prefer location in South Dakota, Nebraska, or Iowa. If you are interested in a first class man state wages and hours. Address Lee O. Bailey, Titze Building, Main Street, Parkston, South Dakota. 7-3t

Situation Wanted—By sheet metal worker of over 18 years' experience in general lines. A thorough shop mechanic and good pattern cutter in cornice, heating and special work. Neat and accurate. Can take charge if required. Address, with full particulars, B-49, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 9-3t

Situation Wanted—Sheet metal worker and furnace man wants situation in small country town with hardware store. Can estimate, figure and cut own patterns. Can come at once. Location and wages not considered. Looking for steady place. Address "Tinner," 1657 Delhi St., Dubuque, Iowa. 9-3t

Situation Wanted—By first-class tinner and furnace man. Do all ordinary drafting or pattern cutting, handle gravity warm air heating in any capacity. Experienced in both country town and city work. 33 years of age, 17 years' experience, married. Good habits. Address J. D. Grace, King City, Missouri. 8-3t

Situation Wanted—Plumber, steam fitter with some knowledge of tinning wants steady position. Married. Will go anywhere. State particulars as to wages and housekeeping rooms. Wire or write William Gross, 205 W. Seventh St., Tama, Iowa. 9-3t

Situation Wanted—By an experienced tinner, hardware clerk, furnace workman and some plumbing. Country hardware store and shop preferred. Reasonable salary or percentage basis. Address Tinner, 7215 West Main Street, Washington, Missouri. 6-3t

Situation Wanted—By first class tinner and furnace man 27 years' experience, nothing but steady job considered. Please state wages, etc., in first letter. Address B. J. Hawkins, 425 N. 4th Street, Iron River, Michigan. 8-3t

Situation Wanted—By first class sheet metal worker, 22 years experience, age 40 and can give best of reference. Address X-31, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 6-3t

Situation Wanted—By a sheet metal worker and furnace installer. Building trade preferred. 31 years old and married. Address W. E. Hull, Delphos, Kansas. 7-3t

Situation Wanted—By a practical all around sheet metal worker with 25 years' experience. Michigan or Illinois preferred. Address P. S. McGuffin, 1214 Fir Street, Detroit, Michigan. 8-3t

Mention **AMERICAN ARTISAN** in your reply—Thank you!

SITUATION WANTED

Situation Wanted—With reliable firm, by practical furnace and sheet metal man, as furnace salesman, estimator, or in charge of installation. Thirty-seven years old; 18 years' experience in all branches of the business in large and small shops. Address X-36, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 7-3t

TINNERS' TOOLS

Wanted—8 or 10 ft. cornice brake. 30 or 36-inch squaring shears and groover, turning and burring machine in good condition. Address X-41, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

Wanted—Will pay cash for brake and square shears in good shape. Also anything in the line of sheet metal tools that you may have with this. Address Mr. Budd, 266 Fayette St., Hammond, Indiana. 9-3t

Wanted—One pair of used sixty inch rollers to take care of 10 gauge and lighter. Address B-52, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 9-3t

Wanted—Complete set of tinnern's tools, excepting brake. Also set of roofing tools. Address X-45, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 8-3t

Wanted—Second-hand Press for small sheet metal specialties. 26 gauge and lighter. Electric power. State make condition and lowest cash price. Address Box 147, Comfort, Texas. 9-3t

For Sale—Full set of tinnern's tools and machines, excepting brake, \$200. List on application. Address John Ellenberger, Emporia, Kansas. 7-3t

Wanted—To buy one 8-foot Chicago steel brake, in good condition. Address John Davidson, O'Neill, Nebraska. 7-3t

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We can use a few Duplex Registers 30"x30"x22" Collars. Security Stove and Manufacturing Company, 17th and Oakland, Kansas City, Mo.

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WANTED

A live wire salesman for a high grade quality furnace that is more than a heating plant. We want the salesman who can secure results from the dealer trade. All correspondence held in strictest confidence. Address L-76, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 7-2t

SPECIAL NOTICES

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and salesmen with own car to co-operate with our exclusive distributors in Chicago, Northern Illinois, Northern Indiana, Southwest Michigan. Strict but liberal commission plus bonus. Splendid opportunity for advancement in our organization. Apply to Maplewood Machinery Company, 2638 Fullerton Avenue, Chicago, Illinois, or our branch, 79 South Water Street, Milwaukee, Wisconsin.

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New York, N. Y. 7-3t.

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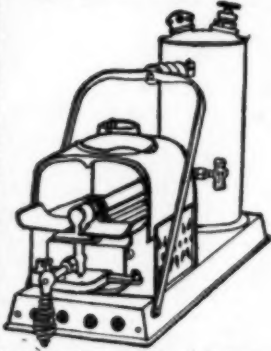
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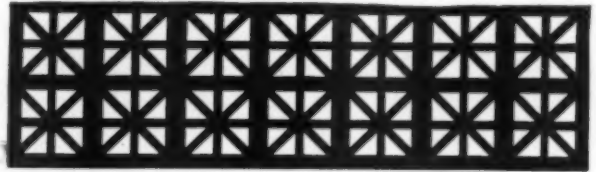
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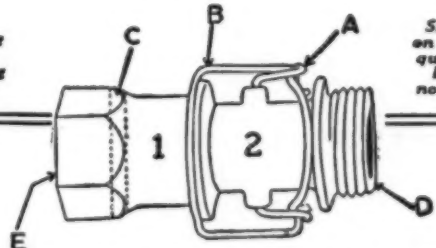
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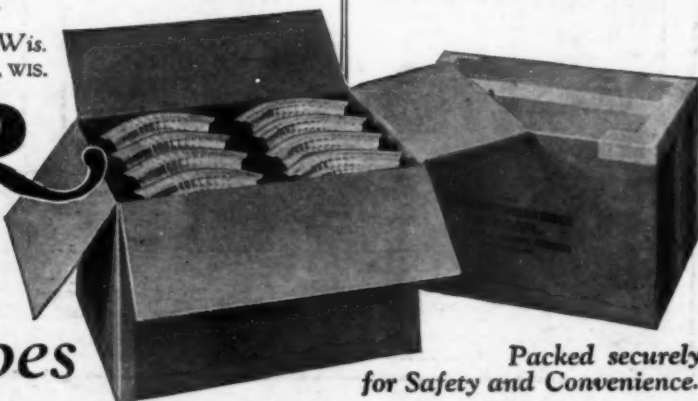
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